California State Journal of Medicine

ISSUED MONTHLY OWNED AND PUBLISHED BY THE
MEDICAL SOCIETY OF THE STATE OF CALIFORNIA

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ENTERED AT SAN FRANCISCO, CAL., AS SECOND-CLASS MATTER

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BUTLER BUILDING, 135 STOCKTON STREET, SAN FRANCISCO

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VOL. XIX MAY, 1921 No. 5

FIFTIETH ANNUAL MEETING OF STATE MEDICAL SOCIETY

The convening of the State Medical Society at Hotel Coronado on May 10, 11 and 12, will mark the completion of a half century of work and progress. A notable record has been written, and one of which the makers need not be ashamed. Many of the men prominent in the earlier days of the society are still actively interested in its affairs, and their presence is both an inspiration and an incentive. The society is honored by having them still on its active list, and is to be congratulated on their service. The program in its final form appeared last month in the Journal, and is inducement enough for every member possible to be in attendance. Matters of great moment to the society and to the medical profession are coming up for consideration. Be sure that all of your delegate positions are filled, and instruct your delegates as to what you want before they leave home. The social program will be unusually attractive this year. Altogether, if you have not yet decided to go, make the decision now. It will repay you manyfold.

A STRONG STATE SOCIETY

Do you think it worth while to have a State Medical Society? Honestly, do you? Have you given any personal thought on your own part to the question of what makes a State Society strong, and why you think this State Society should be developed and strengthened? If the State Society *is* worth something to you, does it meet your ideal now of what it ought to be? Consider for a moment what will best serve to build up your State Society.

First, and above all, is the character of executive secretary it possesses. In your new secretary you have combined in one full-time man the active direction and oversight of all your concerted activities. He is peculiarly fitted to carry this responsibility, and the society is absolutely certain to feel the urge toward strong organization and effective scientific and public work as an immediate result. To build the State Society he will build the County Societies.

Then with regard to the Council. A councilor representing a district certainly should be expected to visit his district in all its subdivisions periodically and be in close touch with its needs, its weaknesses and its possibilities of development. It may not be essential for him to submit a written report to the Council of the "state of the union" in his own district, but at least his district should see that it is represented by a man who really represents and knows it. The duties of the councilor certainly are not comprehended alone in attendance on half a dozen council meetings in the calendar year.

Then the president and his official family. Should they, too, not have an active directing function in the affairs of the society? And should their term of office not be measured in its effectiveness by the growth in numbers, in finances, and in power of the State Society?

The legal department is one of which the society may well be proud. It is active, aggressive, forceful, successful. It exemplifies preventive medicine as well as curative medicine. Seldom does it need legal surgery to extricate members from uncomfortable situations.

In each county society there is room for improvement as we one and all come to a realization of the important service in our professional and civic life which is rendered by our membership in the County Society. Surely, local medical societies of all sorts would do well to affiliate as branches of the County Society. We do not need such a multiplicity of organizations. We do need every respectable doctor to be a County Society member, and it were well if all his professional activities could find expression in the branches and subdivisions of the County Society. The County Society ought to be in a position to touch civic life at every point and to keep itself in the forefront of civic progress.

No more vital arm of the profession can be developed than the small hospital, serving the small town and rural communities. Here lies the panacea for many of our medical ills. Here lies the strongest possible means of raising the average of medical practice both within and without the hospital. None but qualified physicians should be allowed to practice in any hospital. By furnishing a social and professional center, central laboratory and library, and a congenial spot for society meetings, the small hospital in town or country can help immeasurably in drawing the profession together, in improving the weak points of each, and can be so developed that any physician not affiliating with it will thereby be stigmatized in the eyes of the community. At such a small hospital can be centered certain facilities for giving medical care to the poor and to those unable to pay regular rates. This can be done economically for the doctor, to the advantage of the hospital and, moreover, affords a valid and compelling reason for asking the public to help carry the overhead burden of the hospital as a civic institution. The physician should not be required by custom or right to carry the entire burden of supplying the non-paying public with medical attention. Society owes it to them and should help the physician in discharging this social duty.

Finally, there must be inculcated in all of us a conviction that it is not necessary or desirable that we should agree in harmony, peace and unity on all points. Divergence of ideas and methods is the life of science, and more especially of our science. Let us remember, however, that on a few essentials we are actually all in unanimous agreement. Let us stick to those essentials in our program, and allow the fullest liberty in all the non-essentials. In the conduct of county and state societies, agree in harmony on the few basic principles, and then practice individuality in all else. Thus will we succeed in building the medical profession into the position of public trust and efficiency, which is necessary if we are to render good public service. Be a soldier. The society is democratic. Select your leaders with care. Then follow them. If you cannot follow them, get new ones. But be agreed on the few vital points, and the rest will take care of themselves.

ARTIFICIAL IMMUNITY IN DIPHTHERIA

The Schick test for natural immunity in diphtheria should precede the employment of any artificial immunizing process. This test is clinically accurate, of easy application, and only when positive, should be followed by active immunization. In the presence of clinical diphtheria, immunization in contacts who are proved by the Schick test to be susceptible, should consist of the injection of antitoxin alone. This gives immediate passive immunity and protects for a few weeks, seldom, if ever, exceeding four weeks. Therefore, at the end of four weeks or more after the administration of antitoxin for immunizing purposes, toxin-antitoxin mixture should be given, in order to secure active and rather permanent immunity. The toxin-antitoxin mixture is given in three doses at intervals of a week. After the second dose, a Schick test shows whether the third dose is necessary, in some 70 per cent of cases immunity being secured by two inoculations only. This procedure is the recommendation of the New York City Department of Health.

THE GROWING RECOGNITION OF ANESTHESIA

A notable fact in medical progress, during the past few years, has been the increased interest manifested in anesthesia. To the various societies devoted exclusively to this subject, namely, the American Association of Anesthetists, the Interstate, and the numerous state societies—among which are two in California—have recently been added the Canadian Association of Anesthetists and the National Anesthesia Research Society. The latter is being financed by some of the forward looking manufacturers of anesthetics and apparatus, and it is hoped that eventually a foundation may result. The American Year Book of Anesthesia and Analgesia, volume two, just published, having been delayed by the war, is a valuable addition to the literature of anesthesia. Of special interest are the chapters on the pharmaco-physio-pathology of general anesthetics and anesthesia in war surgery.

The following resolution authorized by Dr. Hubert Work, president of the American Medical Association, and Dr. Alexander Craig, secretary of the same, is receiving the signatures of a large number of the Fellows of the American Medical Association:

"Whereas the safety of patients, the advancement of surgery and the demands of hospital service require the rapid extension of the specialty of anesthesia,

Therefore, we, the undersigned Fellows of the American Medical Association hereby petition the House of Delegates and the Council on Scientific Assembly to establish a Section on Anesthesia during the Boston meeting, June, 1921."

The American Journal of Surgery is the official organ of the A. A. A., and devotes a quarterly supplement to current literature on this subject.

Among the constructive measures presented to the present California Legislature, the League for the Conservation of Public Health, through its committee on Medical Education, has recommended in an amendment to the Medical Practice Act, the addition of a prescribed number of hours for the study of anesthesia as one of the minimum requirements for physicians' and surgeons' certificates.

These various facts show the trend of development in one of the branches of medicine which must keep pace with the increasing precision of detail in surgical procedure.

CONDUCT AND VALUE OF AUTOPSIES

The opening of a human body for the purpose of an autopsy is no light matter and should be undertaken with a full sense of responsibility and with a clear understanding of the purposes to be accomplished. There is a full unanimity of opinion among pathologists and experts on legal medicine all over the civilized world that in order to arrive at a fair and satisfactory conclusion from any post-mortem examination it is absolutely essential that all internal organs of the body be carefully scrutinized for the existence of lesions in them *by removing them from the body and opening them up freely*. The necessity for this must be obvious to everyone, be he a physician or layman, more especially when he is informed that the manifestations of disease are often scattered all over the body and occur usually in the interior of these organs and may not be visible at all from the surface on casual inspection. In medico-legal work the necessity for such a searching investigation is so great that it is prescribed by law in many countries. In autopsies done for scientific purposes, any pathologist would feel it to be a reflection on the thoroughness and reliability of his work, if it were even suggested, that he had omitted the examination of any important viscus or any of the steps which are usually prescribed in text books on pathology as necessary for a complete examination.

If we occasionally compromise in this matter to humor the sensibilities of relatives, we always do so at the expense of the object to be accomplished. People would not make these requests for incomplete examinations if they knew that by them they are likely to render practically useless a procedure which they consented to only reluctantly but which they did consent to because they realized the great necessity for it.

Fortunately this thorough examination can be made without disfiguring the outside of the body seriously and without interfering in any way with those parts which are exposed after the body has been properly prepared for burial. Pathologists always have been particularly careful in this regard and it should be understood by the laity that an autopsy, in spite of its searching character in this regard is entirely different from a dissection done for anatomical purposes.

It is obvious that it is for the physician to decide what steps have to be taken at an autopsy in order to find the cause of death or clear up the difficulties encountered during the treatment of the patient, and a layman who volunteers any criticism or information in this regard, even if he be an undertaker, acts contrary to the best interests of all concerned and usually manages merely to expose his own ignorance.

It is also fortunate that a searching pathological investigation, although it naturally renders the embalming of a body more difficult, does not prevent a satisfactory result in the hands of a competent embalmer. All that is required for a good job is ordinary skill and application.

The final point of discussion is that of the removal of organs from the body at the time of the autopsy. It is evident that in any autopsy which is done for medico-legal purposes under the coroner or otherwise, the autopsy surgeon must have the right to remove any and all organs that are necessary for the purposes of his investigation, and in poison cases it often is necessary to remove the majority of the internal organs for this purpose.

A similar condition of affairs exists in the case of autopsies done for scientific purposes. The examination is done with the object of determining certain definite facts and to answer certain definite questions. In this determination it is usually necessary to remove organs or portions of organs for more thorough investigation and study than can be had at the autopsy, when time is naturally limited. Many of these investigations require patient research extending over hours and days, and some of them cannot be performed except within a thoroughly equipped laboratory. It is, therefore, a matter of absolute necessity that organs should be removed for this purpose, and this is common usage wherever scientific autopsies are done.

Pathologists generally, however, have felt that they with propriety could go further than this. It is essential in the teaching of medical students, who are the practitioners of the future, on whose advice and guidance the public will have to depend eventually, that they become thoroughly conversant with the changes which disease brings about in the organs of the body. Unless they have this knowledge they cannot recognize the various diseases nor understand what dangers are connected with them or how to treat them scientifically. It is impossible to have many students at the autopsies, which occur at odd times. It is customary, therefore, in all pathological laboratories here and abroad to gather all the diseased organs from the autopsies which have been held during the week and use them for the instruction of students at stated intervals. Since the removal of the organs relieves the embalmer of an embarrassment in his work, it is often agreed that all organs are to be removed at autopsy. Naturally, as remains of human beings, these organs are treated with care and are properly incinerated when they are no longer required. Some of them are preserved and indefinitely retained in pathological museums, because they serve some permanent useful function for teaching or research.

NEWSPAPER MEDICINE

A splendid example of the crass ignorance and total superficiality of the average newspaper appreciation of scientific medicine is afforded by a recent editorial article in the San Francisco Journal. It would seem that newspapers in general, and especially newspapers which make a particular appeal because of their independent editorial page and their freedom from the smut and sensationalism of too much so-called journalism, would endeavor to familiarize themselves and thereby their readers with the facts of a case before embarking on such a tissue of misstatement and wrong implication as is involved in the article in question. Under the heading of "Scarcity of Doctors" we read as follows: "Matriculation requirements of medical colleges are said to be the cause of the acute shortage of doctors in many parts of the country, and not the retirement of many thousands of them after the extraordinarily prosperous 'flu' years when physicians and undertakers enjoyed unprecedented financial gains." A pity, certainly, that the only basis of fact quoted is in the words "it is said." And it might have been added that "it is said" by the quacks, the low-grade would-be doctors, the commercialized seekers for a shortcut to near-medical education, and all the other ilk who are now prevented in large part by the state law from preying on the public.

There is no shortage of doctors in the United States. This statement is susceptible of abundant proof. Does the S. F. Journal, moreover, know that 26 per cent of the physicians of California were in the medical services of the nation during the "flu" years? Does it appreciate that the brunt of the care of the sick in those black days was borne by the doctors who were left, overworked, carrying their own and their comrades' burdens? Does it know that the death rate among doctors was as high as in any group in the state, and that this death rate was enormously increased because of the extra responsibilities saddled on the doctor by the community? Will the S. F. Journal have the common decency to refute the unwarranted and totally superfluous insult to the medical profession in the implication in the words quoted that "the retirement of many thousands of them" was made possible by the "unprecedented financial gains" from the "extraordinarily prosperous 'flu' years"?

Presumably the non-taxpaying Eddyite practitioners and the law-breaking chiropractors and other quacks are to be put in charge of public health work and are to be considered as having a contribution worth more to the commonwealth than that of modern science. The further argument in the article quoted above, to the effect that high educational requirements are a detriment in medicine and that "good common sense" more than makes up for lack of education and training, is hardly worth noticing, as it falls by its own weight. Common sense is evidently quite as necessary in the practice of medicine as it is in other trades or professions, as, for instance, in newspaper editing. A contradiction of facts by direct statement and by implication is not, in our judgment, a mark of common sense, and certainly is not an evidence of a well-informed writer.

Newspaper medicine, with all its vagaries and its entire lack of appreciation of the objects, methods and data of scientific medicine, is again exemplified in the last paragraph of the article in question, which reads in part: "But barring surgery, where science is absolutely essential, the common sense country physician does remarkably well with the fevers and other ills which come to his area of practice. If he can recognize a surgical condition and send such cases early to hospital, he can be and is of immense service in checking and curing general disease. He does not require a classical education for that." Such egregious nonsense would not have been written by an author who was on speaking terms with what medical education requires and comprises, or who had the faintest comprehension of what medicine and surgery and preventive medicine really are. The country dweller is entitled to as efficient medical service as the city dweller, and this means infinitely more than "recognizing a surgical condition." Again we affirm that the article in question betrays a complete lack of acquaintance with the fundamentals of efficient medical service, of the medical facts involved and of the achievements and methods of modern science. The class of people who appreciate a clean news journal are not the class who will tolerate inaccuracy in editorial presentation, nor will they condone gratuitous insult to the medical profession.

THE SALVAGING OF CIVILIZATION

Under this pregnant title, is appearing in the Saturday Evening Post a series of articles by H. G. Wells, which is decidedly worth the reading by every physician. We hear on every hand futile and disconnected theories attempting to explain the disorganization of life and thought sequential to the Great War. We hear little constructive effort to explain the motives and deeper causes of disorganization, and still less can we find fruitful suggestions for reconstruction. In medicine we are suffering from this general disorganization also. We have forsaken the old gods and are become dilettants of life. We are in danger of losing the old pride of profession, the noblesse oblige, of the physician. We are threatened with commercialism of so insidious a stripe that we do not ourselves often recognize it. We are astigmatic in our view of public obligation, and our sense of responsibility to our fellows is become atrophic. We are unwilling to assume obligations for fear our personal convenience or interest will thereby be sacrificed. We have ceased to build for the future, and our activities are motivated by our own concerns solely. In all this we are not alone; we are no different from the rest of the world. We follow like sheep in the paths of least resistance and common trend. We are hypnotized by the fad of the hour, whether in pleasure, in therapeutics or in spiritual culture. Yet while we have much company, and the course we follow is the easy course of contemporary humankind, yet is our fault greater, and our blame greater, and our penalty greater, because we have come

from a greater height and a greater opportunity.

How, then, does H. G. Wells analyze the social disorganization with which we are contending? What is his diagnosis, prognosis and, above all, what course of therapy are we to pursue after consultation with him? The answer to these questions at once suggests the statement recently of a leader in the financial world who said that business stability would come only with increased faith, with a return to the values of religion, and the development of the old-time emphasis on the supreme importance to the state as to the individual of loyalty to God, to country and to home. These three are indeed what makes Americanism, both past and present. We, as physicians, need especially to reaffirm this ancient creed. In it is our salvation, and the future of America and of the world.

Once more, to answer the questions as H. G. Wells answers them. It can be done no better than in his own words, and these words are worthy of much pondering. "Our modern communities are no longer cemented; they lack organized solidarity; they are not prepared to stand shocks and strains; they have become dangerously loose, mentally and morally. That, I believe, is the clew to a great proportion of the present social and political troubles of the world. We need to get back to a cement. We want a Bible. We want a Bible so badly that we cannot afford to put the old Bible on a pinnacle out of daily use. We want it readapted for use. If it is true that the old Bible falls short in its history and does not apply closely to many modern problems, then we need a revised and enlarged Bible in our schools and homes to restore a common ground of ideas and interpretations if our civilization is to hold together."

So much for the diagnosis, and here is the remedy. People should "see themselves and the news of today as part of one great development. It would give their lives significance and dignity. It would give the events of the current day significance and dignity. It would lift their imaginations up to a new level. If you look back into the lives of the Pilgrim Fathers, let us say, you will find that these men had a sense of personal significance, a sense of destiny, such as no one in politics or literature seems to possess today. They were still in touch with the old Bible. Today if life seems adventurous and fragmentary, and generally aimless, it is largely because of this one thing. We have lost touch with history. We have ceased to see human affairs as one great epic unfolding. And only by the universal teaching of universal history can that epic quality be restored."

Foremost in the new education and development of the sense of destiny and personal responsibility, Wells places the study of the "rules of life; rules of health. This, also, the modern citizen needs and should have; he and she needs a book of personal wisdom. One of the first duties of a citizen is to keep himself in mental and bodily health in order to be fit for the rest of his duties."

It is a keen analysis by a great thinker. We do need to return to the old gods, the social values of Americanism, the spiritual foundations of our fathers' fathers. As a profession, we must lead in good citizenship, in observance of law, in maintenance of order, in respect for the flag and reverence for the traditions of our country. For God, for country, for home—no motto can go further. No guide can be safer. It is time for us to start.

THE PHYSICIAN AND SOCIAL AGENCIES

Of necessity, the attitude of the physician toward social agencies must be most sympathetic. His work is so intimately related to social service and so admirably conserved and multiplied by the social worker that he cannot but be interested in the conduct and development of the social agencies. He should be anxious to co-operate. He should be willing first to learn from experts in the field of social medicine, sociology and social relief, as to what is needed of him in this new and fast advancing department. Having learned that, he must in his turn teach, advise and contribute of his knowledge and ability. He must face the fact that social workers are the vanguard of an army of laymen, who, with awakened conscience and eyes opened to the possibility of diminishing the enormous losses of disease, are working inevitably toward an era in which preventive, social and group medicine will absorb a large amount of his effort.

He knows all too well the tragedy of long-continued illness and disablement in the poor and middle-class family. And his desire to change these conditions should be so great as to make him willing, if need be, to suffer some inconvenience and financial loss during the transition to a more social type of practice.

The physician must admit that, overworked and engrossed as he is with technical problems, it is the social worker who must do the planning of ways and means. The physician, however, should enter into conference with these workers, not as an obstructionist fearful of change, nor as one selfishly demanding his own rights, but as a sympathetic expert who would have the new era marked by the most extensive use of the latest and best methods of treatment and diagnosis.

Those physicians who work among the poor (and who of us does not?) should know what social agencies are available to help him solve the problems which constantly arise. They must know how and when to call these agencies to their aid. They must realize the importance of the work of the agencies in making the treatment of disease actually effective and often even possible.

Here lies a great department of modern medicine. Its development lies in the hands of the social agencies. These agencies to be fully effective, require the advice and counsel which only the physician can give. Let the relationship be mutually sympathetic, helpful, conciliatory, and it will be mutually efficient and beneficial.

Editorial Comment

Society does not owe a living to any man. But most emphatically, each and every man owes the making of a living to society.

It is not safe to assume that increased basal metabolism is always, or usually, accompanied by a fast pulse rate. There is a connection, but exceptions are not infrequent.

It would doubtless serve a useful purpose if the State Medical Society had available, a circulating library of medical texts for the use of physicians in smaller towns and rural sections.

Do not forget Webster's definition of medicine as the prevention, cure and alleviation of disease. It is a definition which renders ridiculous the claims of the quacks, the cultists, and the faddists, that medicine means nothing but the administration of drugs.

The speed and promptitude which was evinced by many Eddyites this past winter in securing the protection of vaccination, was only exceeded by the silence maintained by others of the same persuasion, who contracted smallpox for lack of vaccination.

"On parent knees, a naked new-born child,
Weeping thou sat'st while all around thee smiled;
So live, that, sinking in thy last long sleep,
Thou then mayst smile, while all around thee weep."

—Calidasa, Sir Wm. Jones' translation.

Now is the time to keep yourself closely informed as to the attitude evinced in the Legislature by your own individual representatives, whom you helped elect to their present office. Let them know that you follow with care their votes on questions affecting the public health and scientific medicine. The number of doctors who pursue this course is rapidly increasing. See whether *you* are being represented or misrepresented.

Only the strongest reprobation can be accorded the use of so-called cancer cures at a high price at the present state of our knowledge. The doctors are being insulted as far as their intelligence is concerned, and impugned as far as their morals are concerned, by certain drug houses which are attempting to exploit cancer cures and commercialize false and misleading claims. The doctor or layman who has a "cancer cure" at a high price is to be looked on with suspicion, and needs to justify his existence in no uncertain language.

One is often tempted to believe that it is in reality a strange perversion of function that of all men, the physician, should have to be the one to watch and protect the public health against the unlicensed and unscrupulous commercialism of chiropractors, and quacks in general, who seek to fatten off of the health and happiness of the people. One is tempted to wonder why the physician should not step down from his onerous and, too often, thankless post, and let the public have a full tide of quackery turned loose upon itself. The end would possibly justify the means.

The dental magazine, Oral Hygiene, is responsible for the following, "A chiropractor breaks loose with this,

"'My dear Doctor:—In poisonous dentistry, quicksilver heads the list with about 300 symptoms. Amalgam fillings contain about 40 per cent. of quicksilver combined with tin, silver, copper, zinc, etc., increasing their galvanic and poisonous effects added to their own.

"'Many dentists are afraid to handle amalgam as they used to do (mix it in the hollow of the hand) but use one of the various mixers in use and then place in the mouths of their best friends who furnish them with shelter, food, raiment, etc., a poisonous combination of base metals capable of causing their unsuspecting victims to literally rot alive and have the disgrace of having died of syphilis. Pseudotherapy, pseudosurgery, and poisonous dentistry are crippling the world; who will come to the rescue?'"

KEEP THE TUBERCULOSIS POOR IN THEIR HOME STATE

The Denver Anti-Tuberculosis Society estimates that several hundred tuberculous persons without funds come to Denver every year. Practically all of them come because they have the mistaken idea that climate will cure tuberculosis.

They arrive, almost penniless, without having made any inquiries, or any provisions for their needs. Since Colorado has no state, and Denver no municipal tuberculosis sanatorium (merely a ward at the County Hospital for thirty-five very sick tuberculous residents), the care of such indigent persons is limited to a few free private sanatoria, which are continuously so overtaxed that admittance is a long and difficult matter. These sanatoria comprise: the two Jewish, which accept only a small number of Gentiles; a tent colony of men with a capacity for seventy "down-and-outers"; and a small home for a dozen destitute tuberculous women.

These tuberculous poor who migrate to Denver, finding no place where they can be cared for, look for light work in order to maintain themselves and often their dependent families; but the demand for such work is far in excess of the supply. Driven to any work they can get, with neither friends nor care, anxious, homesick, hopeless, they rapidly grow worse and usually soon die. They die for lack of proper rest, food, fresh air, and medical attention—those essentials of treatment which many of them could have had at home—or here with sufficient funds for two years' care. Without these essentials climate is of no avail. If it were, Denver would welcome these tragic health-seekers instead of urging them, for their own best chances, to stay at home.

Denver also urges that the states throughout the country plan definite programs to retain their indigent tuberculous, giving them effective treatment in state sanatoria or in their own homes.

In Minnesota a physician has been held liable for the death of a patient through administering impure ether. The Court held that it is the business of a physician to see that the ether used for anesthesia is obtained from a reliable source and is intended for that purpose.

Original Articles

SMALLPOX A QUARANTINABLE DISEASE *

By W. J. HANNA, M. D., Sacramento.

The credit of giving vaccination to the world is due to Jenner, who proved through carefully planned experiments that cowpox protects against smallpox.

Vaccination was the first specific prophylactic measure given to man; it produces an active immunity to smallpox. Much of the anti-vaccination sentiment is due to ignorance, or misconstruction of facts, and a feeling of safety because of quarantine.

The statement of farmers and folk of England, "I cannot take smallpox because I have had cowpox," made a strong impression upon Jenner, who verified the vague tradition which had been in vogue for a long time; by logical and scientific methods proving that a person who has had the mild disease, cowpox, enjoyed protection against the serious and often fatal disease smallpox.

These experiments were made in 1796, when vaccine matter was transferred from the hand of a dairy maid to the arm of a boy about eight years old. The girl had scratched her hand with a thorn and was infected with the cowpox from her master's cows. The transfer of vaccine virus was followed by a typical take. In order to ascertain whether the boy, after feeling so slight an affection of the system from the cowpox virus, was secure from the contagion of the smallpox, he was innoculated with variolous matter immediately taken from a pustule. Several slight punctures and incisions were made on both arms and the matter was carefully inserted, but no disease followed. Several months afterwards he was again innoculated with variolous matter, but no sensible effect was produced on the constitution.

In addition to this direct experimental proof, Jenner innoculated smallpox matter into ten persons, who at some previous time had contracted cowpox, with the result that not a single case produced smallpox.

This proof put a popular belief upon a scientific basis and demonstrated that cowpox is a local and trivial disease in man, and that it might be transferred from man to man, and that it protects against smallpox. In Jenner's own words: "I placed it on a rock where I knew it would be immovable before I invited the public to take a look at it."

Vaccination against smallpox was introduced into America in 1800; and in 1806 Thomas Jefferson, in writing to Jenner, said: "Future Nations will know by history only that the loathsome smallpox has existed, and by you has been extirpated." This prophecy has not yet been fulfilled.

Vaccination must be considered as a surgical operation. No person unfamiliar with surgical cleanliness should be permitted to perform this "little" operation.

During the Spanish-American War the author of this paper was stationed at the outpost of Cavite, P. I., and had 800 men under his care, among which was a battalion of the 51st Iowa Infantry; the other two battalions being stationed in Cavite, a town some five miles distant. The entire command was vaccinated and revaccinated, with the result that not a single case of smallpox occurred during the six months' service; although the disease was prevalent in the surrounding community. Smallpox broke out in the two battalions of Iowa troops stationed in Cavite, and as a result four soldiers died from the disease.

If there is one fact that has absolutely been demonstrated by the medical profession it is that vaccination prevents smallpox. Vaccination protects not only against smallpox, but also against vaccinia. The degree and length of immunity appear to be greater against smallpox than against itself.

The general health laws of the State of California require that each person who has contact with a case of smallpox, subsequent to the appearance of the smallpox eruption, shall be vaccinated, or put in quarantine for a period of twelve days. Vaccination within three days after exposure to a patient in the eruptive stage of smallpox, will prevent smallpox; vaccination after the third day will modify the onset; and vaccination within the first ten days, after symptoms have appeared, will hasten the recovery. Immediately after vaccination, contacts who are inmates of a quarantined house may be released, and it shall be the duty of the local Health Officer to provide at public expense, free vaccination to all persons who have been exposed to smallpox. Unvaccinated children and persons shall be excluded from attending schools in subdivisions where smallpox exists.

There is no reason why a person who is afflicted with smallpox should be quarantined, except that people who refuse to be vaccinated are protected from the disease. One of the main reasons why anti-vaccination propaganda is spread, is because conscientious objectors feel safe from contracting the disease on account of rigid quarantine.

Smallpox during recent years has been of such a mild character, in the majority of cases, that it has been designated "modified smallpox." The grandparents and parents of the present generation, who have been successfully vaccinated, have caused immunity from the serious forms of the disease, and now is the time for the medical profession to take a stand and preach what they would like to practice, "Vaccination Without Quarantine."

Doctors and nurses, for the sole reason that they are protected by proper vaccination, come in daily contact with smallpox, and there are no cases on record where they have contracted the disease, unless they have neglected the protection of proper vaccination.

If anti-vaccinationists are encouraged in their feeling of safety by the quarantining of smallpox, they will continue to preach and their following will be increased, and when smallpox breaks out in future generations, as it certainly will, the death rate will be appalling.

With these facts before us, it is recommended that free vaccination be offered, and quarantine of smallpox be abolished.

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POISON OAK DERMATITIS
(A Specific Treatment.)

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The poison oak plant (rhus diversiloba) grows extensively along the Pacific Coast where the soil is not too dry, up to elevations of five or six thousand feet. It belongs to the same family as the "poison ivy" plant (rhus toxicodendron) and "poison sumac" (rhus venenata).

Early investigators thought that the active poison was a micro-organism, and subsequently it was believed for a while to be a volatile acid.

Syme (1) in 1906 concluded that it was a non-volatile glucoside containing rhamnose, fisetin and gallic acid. This is the accepted belief today.

Von Adelung (2) in 1913 proved experimentally that the poisonous agent was non-volatile. Those cases of dermatitis having arisen from being near the plant, but not in direct contact, probably result from transmission of the poison by pollen or leaf hairs which do not contain the same but may take it up by contact with other parts of the plant. Likewise the finely divided toxin may be carried from the burning plant by the heavy smoke. He also demonstrated that in his series there was no such thing as absolute immunity to this poisoning, although some individuals were very resistant.

In 1917, McNair (3) proved that bacteria are not in any way concerned, and that the serum from lesions of this disease will not produce a dermatitis. It was formerly believed that this serum was irritating, but now the appearance of new lesions is explained by the fact that the poison is slowly diffusible and makes its entry through the various glands and follicles in the skin in regions that have come in direct contact with the poison.

McNair (4) in January, 1921, presents evidence proving that poisoning occurs only through actual transference of the active principle to the areas affected. This may be through the medium of a great variety of articles. These papers contain extensive bibliographies and are well worth reviewing. On account of limited space and time, no effort has been made by the writers to review the literature here. The references given below are to articles that contain full bibliographies.

Poison oak dermatitis is a condition with which the laity as well as the medical profession of California have been quite familiar since "pioneer days," and its treatment, consequently, is an old problem. Many are immune to this trouble and remain so for years; but this "natural" immunity often is known to disappear. The writers have never had poison oak dermatitis, although exposed often since infancy; but they fully expect to lose this immunity some day. Here in California one often sees individuals who claim that their immunity was induced by eating the leaves and small twigs of the plant, which procedure made them very sick for a few days. This eating of the leaves is common practice in some localities, the method varying from using the raw plant to drinking a "soup" made from the same. Recently, our attention was called to the apparently successful use of the latter method by an engineering outfit in the mountains. So numerous were the cases of dermatitis venenata amongst the men that it was feared by the company's surgeon that the work would have to be abandoned, when the men solved the problem themselves by preparing a "soup" from the plant and drinking it ad libitum. Then the number of cases became very greatly reduced, according to the surgeon for the company.

Dr. Strickler's article (5) in which he described work done with extracts of the poison ivy and poison oak plants interested us greatly, and through his kindness we were able to try his poison oak extract on over fifty cases at the Letterman General Hospital (U. S. Army). Owing to great pressure of work, full case records were not kept, but Captain Petch, in whose service these cases were treated, observed almost uniformly good results. Usually the acute symptoms were ameliorated within forty-eight hours after an intramuscular injection of 1 cc. of the solution. Amongst the enlisted men, many of whom were having their first experience with poison oak, this treatment became very popular.

The writers of this paper have used the poison oak extract in thirty-four cases with very interesting and often striking results. As the supply of extract soon was exhausted, George Broemmel (B. S., Ph. G., Ph. C.), prepared a quantity for us. Our dosage has been 1 cc. intragluteally or in the deltoid.

Almost invariably one intramuscular injection is followed by great relief of the local symptoms; swelling and itching particularly begin to subside within twenty-four hours. There is not much local irritation as a rule, but at times where some of the fluid has worked its way along the track of the needle, a painful indurated nodule appears and is slow in subsiding. Occasionally we have felt impelled to give a second and third injection within seventy-two hours and in some of these cases have noticed the occurrence of new lesions on remote parts of the body. We feel that this may have been due to excessive dosage and, if so, is in itself evidence of the specificity of the treatment. Possibly our few unfavorable results have been due largely to this factor. We are now giving only one injection and hope soon to determine the question of dosage.

Naturally, the possible development of immunity to this poison after these inoculations is a matter of great interest. Some of the patients whose records are to follow seem to have become immune. How long this will persist cannot be predicted. Whether or not this immunity would have developed anyway in the natural course of events cannot be said; but these results are certainly suggestive.

Case I. History 3046 (private). A girl fifteen years of age presented acute dermatitis of entire face (with swollen eyelids completely closing the eyes), neck, hands, behind knees, and genitalia. This had existed twelve hours. The patient had been exposed to smoke from burning poison oak plant the day before. She was given 1 cc. of the oak toxine intragluteally and a calamine lotion to apply. After a very uncomfortable night,

the irritation and swelling began to subside rapidly. Within twenty-four hours after the injection, the eyes were wide open and all the areas showed very marked subsidence in the inflammation. From this time on improvement was rapid, and within six days after the injection the patient was well. Besides the calamine lotion, the mother used a witchhazel extract wash, and veronal was given the first night. This local treatment alone has never been observed to produce such marked and rapid improvement. Previous attacks on this girl were very severe and prolonged for several weeks.

Case II. History 4661 (private). A large robust man, twenty-nine years old, presented acute areas on his forearms, thighs, and genitalia of a few days' standing. He was given ½ cc. of the oak toxin diluted with salt solution āā. intragluteally. During the succeeding two days the dermatitis showed great improvement. Then another injection of ½ cc. was given. During the next four days improvement continued. Then suddenly, without a history of fresh exposure, new lesions came on the legs, heels, and forearms. An injection of 1 cc. of the extract was given, and within twenty-four hours the old lesions were drier, but several new ones appeared on the back of the right hand, both outer arms and thighs (just below the original areas). The patient was sent to Stanford University Hospital. For two days, improvement was steady and then a few new acute lesions appeared on various parts of the body. No more injections were given, it being feared that possibly they were producing these several crops of lesions on remote parts of the body. There was no possibility that the patient had been re-exposed to the plant or to contaminated clothing, for due precautions were taken and the patient was in bed in the hospital. Within fifteen days after the first injection, the poison oak dermatitis had cleared up. Locally, in addition to sodium hyposulphite baths, zinc oxide-lime water, calamine, and lead acetate lotions were all used.

The oak extract used in this case was part of the first lot made and contained some sediment. It is possible that recovery would have occurred much earlier (although under ordinary treatment, fifteen days is a rather brief period for severe cases) had a smaller dose been given. Could not these crops of new lesions in remote parts of the body have been due to the injection? Certainly, they were not due to fresh exposure.

Case III. History 6074 (private). A healthy man, age forty, presented acute lesions on forearms, neck, face, and genitalia. Three days previously he was exposed to poison oak, to which he is very sensitive. For years he was subject to very severe attacks, but lately began to feel that he was immune. The writer gave him 1 cc. of the toxine intragluteally in the morning. In the afternoon he felt better, but later that night all of his lesions became much aggravated. He was given a second injection of 1 cc. The next day his lesions looked much better, but the patient said that they felt worse. He had been applying industriously various home remedies, including buttermilk, gun powder, starch, ammonia, "life root," and "fire weed." On the following day conditions were improved. During the following four days lesions steadily improved, but patient insisted that they felt worse. He did not call again for eleven days, when he presented subacute dermatitis in all the areas originally involved, and stated that he had been using ammonia water freely as "that was the only thing that relieved him." Three days later he was practically well. The writers are inclined to believe that the patient's neurotic condition and his overzealous use of a great variety of unusual "home remedies" were responsible for his dermatitis being unduly prolonged (nineteen days). Possibly too much oak toxine was injected.

Case IV. History 7262. A girl twelve years old had acute dermatitis venenata on her forehead, cheeks, chin, forearms and arms, of eight days' duration. During this time, in spite of local treatment prescribed by competent specialists, the condition had not improved. We gave her 1 cc. of the oak toxine intragluteally, and within forty-eight hours her condition was very decidedly better. This was the first relief she had experienced. Within a week after the injection, her old lesions had rapidly subsided, but in some places the dry skin was peeling and repair of the damaged skin was proceeding. It can be said that the specific poison oak dermatitis subsided within a few days after the injection, and that the exfoliation and accompanying keratoplastic processes were the natural result of the damage done by the dermatitis venenata, and that this phase should not be considered part of the specific dermatitis. At the end of the week, however, a few tiny new vesicles appeared on the hands, although the patient was not exposed. Could this have been due to the dosage injected?

A lime water-zinc oxide lotion was used locally.

Case V. History 7256 (private). A man twenty-seven years old had a few small acute lesions on his forearms, due to exposure to poison oak four days previously. He was given 1 cc. of the toxine intragluteallly. No local treatment whatever was given. Within forty-eight hours the lesions were markedly improved, and the relief was complete within four days after the injection. The patient, who has had many attacks of this trouble, states that this time improvement was more rapid than ever before. He is going to rub some leaves into his skin soon to see if he is now immune.

Case VI. History 7124 (private). A young lady who was always very susceptible to the effects of poison oak (having had severe attacks of dermatitis, keeping her in bed for three or four weeks), was exposed to the smoke from the burning plant. The next day she presented a universal dermatitis with considerable œdema in places; but no vesiculation. She was given 1 cc. of the toxine intragluteally. The next two days showed no improvement but temporary relief from itching and burning. On the following day, itching was again severe, and a second injection of 1 cc. of the toxine was given. Within forty-eight hours all of the symptoms, objective and subjective) were greatly ameliorated, and four days later (nine days after the first injection and six days

after the second) the skin everywhere had become almost normal but, suddenly, without there having been a fresh exposure, small groups of acute vesicular areas came on the legs. These subsided rapidly. Could these new lesions have been caused by the injection? The patient's old clothing had been properly cleaned and there was no possibility of fresh contamination.

The local treatment consisted of soda baths and a calamine-zinc oxide lotion. The rapid improvement in this case was very striking, compared with her previous experiences with local treatment only.

Case VII. History 7230 (private). A boy eighteen years old was exposed to smoke from a burning poison oak plant, and the following morning presented acute lesions on most of his face, wrists, and genitalia. He was given 1 cc. of the toxine intragluteally. Within twenty-four hours his condition was much improved, and on the following day all of the areas were subsiding. Four days after the injection there was nothing left of the inflammation or œdema, and the skin was dry and desquamating.

Locally, he was given a zinc oxide-lime water lotion and soda baths.

Case VIII. History 2981 (private). A boy, age nine years, had acute dermatitis venenata on his face, neck, and genitalia of a day's duration. An injection of 1 cc. of the toxine was given intragluteally. Within forty-eight hours the inflammation subsided completely, and the skin was dry and desquamating. A lead acetate, zinc oxide, lime water lotion was used locally.

Case IX. History 5812 (private). A young woman had acute dermatitis on her face and extremities of two days' standing caused by exposure to poison oak. The usual 1 cc. dose was injected intragluteally. Next day her condition was somewhat improved. She was then given another injection (1 cc.). Within three days after the first dose all her lesions had subsided to a great extent, and within two more days she was practically well. Locally, a zinc oxide-starch lotion was used.

To test her "immunity," two months later she deliberately rubbed some poison oak leaves into her skin. The results were most favorable—no dermatitis resulted. Always before this experience she was very susceptible to the effects of poison oak. This test seems to prove that immunity has developed.

Case X. History 5350. A young lady presented a moderately severe case of dematitis venenata due to poison oak, which she had acquired when hiking. Face was in an acute inflammatory condition, and many blebs present on chin and cheeks. Hands and arms also diffusely affected, but less than face. Itching and burning were almost intolerable. This was the repetition of many previous attacks.

One-half cc. extract of poison oak toxine was given intramuscularly (deltoid) together with a soothing lotion. Moderate relief was obtained from the itching and burning. On the following day a second injection of ½ cc. was given and followed by great improvement. The itching and burning were practically entirely relieved and the swelling greatly reduced. Three days later, she reported that she was so comfortable that she did not feel the need of further treatment. Examination showed a few small itching areas still persisting. In two weeks the patient reported that she had been exposed to poison oak, but suffered no ill-effects. The week following this she reported with a dermatitis venenata which began three days after exposure, but was much less severe than previous attacks. A third injection of 1 cc. was given intramuscularly. Two days later, she reported herself entirely well. This patient promised to report any further recurrence, but has not done so.

Case XI. History 5539 (private). Severe dermatitis venenata on hands and face. Patient had always been very susceptible to poison oak. One cc. alcoholic extract poison oak toxine was given intramuscularly. A second injection was given the following day. No new lesions developed. Improvement was rapid. Two weeks later, the patient returned with a severe dermatitis venenata, and a third injection of 1 cc. was given. Two days later she reported great improvement. In fourteen days, she reported frequent exposures to poison oak, not followed by discomfort. Six weeks following she reported herself free from poison oak infections except for slight lesions on wrists, and a fourth injection of 1 cc. was given. Two weeks later she had a recurrence on cheeks and about eyes, following an exposure, but not as severe as the previous attacks. A fifth injection of 1 cc. of the extract was given. Two weeks later another attack of dermatitis venenata developed, and a sixth injection was given. For a time she seemed much improved and to have developed a partial immunity. This has not been permanent, however, and she has discontinued treatment, and regards herself as no better off than before. We have not had an opportunity to see or talk with her. She lives in a place where the poison oak plant grows thickly.

Case XII. History 5326 (private). A middle-aged lady in good health reported with severe dermatitis venenata involving both eyes, the face in general, arms and thighs. One injection (1 cc.) of the poison oak extract intramuscularly was followed by moderate relief. The following day a second injection (1 cc.) was given and all swelling subsided, practically, in twenty-four hours. The following day a third injection (1 cc.) was given, the patient telephoning the next day that all itching, burning, and swelling had disappeared. She had, however, a moderate dryness of the skin and slight local reaction at the site of the last intramuscular injection. Four days later a dry, burning patch was discovered on one thigh. A fourth injection of 2 cc. was given (and was followed by chilly sensations and nausea), but the burning and swelling were relieved without local applications.

Case XIII. History 5699. An eastern tourist had been in the woods gathering autumn leaves and developed an extensive and severe case of dermatitis venenata. When we first saw the patient, she had been nearly distracted for ten days. Her face was swollen beyond recognition, and the itching and burning were almost unbearable. One

intramuscular injection of 1 cc. of the alcoholic extract brought appreciable reduction of the swelling, and moderate comfort. The following day a second injection was given together with an ointment to relieve the dryness of her skin. She reported the next day much relieved, and was given a third injection. Following this she was practically relieved and needed no further treatment.

Case XIV. History 4483. A healthy middle-aged lady telephoned, saying she was so severely infected with poison oak that she could not call at the office. Her whole face was intensely swollen, when seen, and her hands and arms were also greatly involved. One cc. of the alcoholic extract was given intramuscularly, with moderate relief of itching and some subsidence of the swelling. A second injection was given the following day, and the swelling practically entirely subsided. She had a very severe local reaction at the site of the last injection. During the course of injections, this patient also was provided with a soothing lotion.

Case XV. History 5269. A seven-year-old boy came to the office with edema and extensive inflammatory lesions of the entire face, wrists and forearms. An injection of ½ cc. of the alcoholic extract of poison oak toxine was given intramuscularly, and also a soothing lotion. The next appointment was broken, but his mother telephoned that he was very much improved. One week later, the condition having become stationary, an injection of 1 cc. was given intramuscularly. One week later was reported as well.

Case XVI. History 5832. A nurse from Stanford University Hospital had a dermatitis venenata on her forearms of twenty-four hours' duration. Also marked involvement under the eyes and on the legs. An injection of 1 cc. was given intramuscularly together with a soothing lotion. There was very little improvement. A second injection was given the next day with marked improvement following. A third injection on the third day brought entire relief and comfort. She promised to inform us of any further trouble but has not, as yet.

Case XVII. History 4363 (private). A strong, healthy farmer reported with severe dermatitis venenata of thighs and genitalia, and a few scattered areas on the arms. Itching and burning were very intense and had been so for twenty-four hours. An intramuscular injection of 1 cc. was given together with a soothing lotion. The patient reported next day that the itching and burning had been almost entirely relieved in a few hours, and that he had had a good night's rest. The swelling had been diminished about one-half. A second injection of 1 cc. was given and the patient reported the following day, practically well. One sluggish patch remained on the thigh, however, and a third injection was given (1 cc.). He did not report any further trouble. This is one of the most satisfactory cases we have treated.

Case XVIII. History 5826 (private). A robust lady of middle life reported with mild infection of both wrists, due to exposure to poison oak. One 1 cc. injection, together with a soothing lotion, was followed by complete relief in forty-eight hours.

Case XIX. History 5711 (private). A lad of nine years presented the fourth attack of dermatitis venenata during the season. His mother stated that he had always been very susceptible to poison oak. An intramuscular injection of ½ cc. alcoholic extract was given, together with a soothing lotion. Great relief followed very shortly. The lesions dried promptly, and practically all discomfort disappeared. One week later he was given an intramuscular injection of 1 cc. in an endeavor to develop an immunity. The mother promised to report any further trouble but has not, as yet.

Case XX. History 5727. An office nurse reported with a dermatitis venenata of four days' duration. Thighs and legs were intensely inflamed, and many acute lesions were present on hands and arms. A mild, soothing lotion was given, together with 1 cc. alcoholic extract intramuscularly. Next day she reported, unimproved. A second injection of 1 cc. was followed by moderate relief of the burning, itching and swelling. A third injection (1 cc.) was given, and patient improved rapidly. No new lesions developed, and the original lesions dried and healed rapidly. There was no local reaction.

Case XXI. (Private.) A middle-aged professional lady reported with probable lesions of dermatitis venenata on both wrists. Many bullæ were present, together with much induration and swelling. One-half cc. alcoholic extract poison oak was given intramuscularly, together with a soothing lotion. No improvement followed. A second injection of 1 cc. was given, and the lotion continued. There was no improvement. A third injection of 1.5 cc. was given, but there was a persistent lack of improvement. Four days later the patient telephoned that she was quite ill,—had numbness of extremities, tingling sensations and various nervous symptoms, and that the lesions were unimproved.

Case XXII. (Clinic.) A fourteen-year-old boy reported with an intense dermatitis of face and hands, with the eyes practically closed. He had had no rest for three nights. An injection of 1 cc. alcoholic extract was given intramuscularly, together with a soothing lotion. Next day he reported, and his eyes were much improved and he had had a comfortable night. A second intramuscular injection was given. He called next day, the face looking practically normal, but considerable involvement persisting in the hands and arms. This involvement was not extensive enough, however, to warrant a third injection.

Case XXIII. No. 7383 (private). A young lady reported with an eruption of dermatitis venenata on arms and chest of four days' duration. Lesions were not in the vesicular stage, but were erythematous, very itchy, and caused her a great deal of annoyance, especially when she became warm. One-half cc. poison oak extract was given, together with a soothing lotion. Next day she reported that she was very much relieved. The lesions had subsided so well that a second injection was not necessary, and within a week she was well.

Case XXIV. No. 7391 (private). A young lady reported with a severe dermatitis venenata (bullous) on the body and face. Itching was very intense, and the burning was so severe that the patient could scarcely sleep. One cc. poison oak extract was given, together with a soothing lotion. In twenty-four hours the lesions had subsided markedly and were partially dried. A second cc. of poison oak extract was given, and the local treatment continued. The next day the lesions were very much improved, as were, also, the itching and burning. From that time on the patient improved steadily, and was practically entirely relieved within four days. On the second day following the second injection, the patient developed what appeared to be a slight recrudescence on the chest. This disappeared promptly without further treatment.

Case XXV. No. 7396 (private). A young lady reported with a severe dermatitis venenata on the arms and face. Few small blebs had developed on the arms. Itching and burning were very pronounced. One cc. of the poison oak extract was given intramuscularly, together with a soothing lotion. Twenty-four hours later the patient reported the itching and burning entirely relieved. The local condition remained about as before. A second cc. of poison oak extract was given, and the soothing lotion continued. The next day the lesions were practically quiescent—showing only roughened and scaling spots. The local treatment was continued for two more days, and the patient dismissed as well.

Case XXVI. No. 7399 (private). A young lady reported, stating that she had been exposed to poison oak two days previously. She had been subject to very severe attacks of dermatitis venenata for many years, and had learned that the outbreak was preceded by a feeling of tension, tingling and itching of her skin. Having these symptoms, she sought relief from what she felt was an oncoming attack. One cc. of poison oak extract was injected, and a soothing lotion prescribed. The next day she reported that she was entirely comfortable, and that all the symptoms had disappeared. The next day she telephoned that nothing new had developed, but promised to notify us definitely if such were the case.

Case XXVII. No. 7408 (private). A young man reported with an early eruption of dermatitis venenata on the face and what he feared, from previous experience, was going to be extensive involvement over his body. He had been exposed three days previously. One cc. of poison oak extract was given intramuscularly, together with a soothing lotion. The next day he telephoned that all his symptoms had disappeared, and that the lesions on his face were rapidly abating. The following day, he reported that he was entirely comfortable.

Case XXVIII No. 7398 (private). A girl, age six years, was brought in with a beginning dermatitis venenata on her forehead and cheeks, hands and thighs. She had been exposed to poison oak a few days previously. The child refused an intramuscular injection, so was given the poison oak extract in five-drop doses, by mouth. She was also given a cleansing and a soothing lotion to apply. Three days later the lesions were all much improved—no new ones had developed. Two days following, the mother telephoned that the child was practically entirely well.

Case XXIX. No. 93,149 (clinic). A young man called with dermatitis venenata due to poison oak, on both arms and on the face, of about three days' duration. The patient being out of work at the time, was given no local treatment of any kind, in spite of a rather intense burning and very intense itching of the forearms and face. One cc. of poison oak extract was given intramuscularly. Patient reported the next day that he was considerably relieved of the itching and burning, but the lesions themselves showed very little difference in appearance. A second injection was given, with very little change in the appearance of the lesions on the following day. A third injection was then given, and the patient instructed to report the following day. On that day the patient showed a marked improvement. The swelling and edema of the parts had subsided rapidly, and the subjective symptoms were practically nil. His convalescence was uneventful. Thus complete relief was observed within three days after treatment was begun, and no local applications were given.

Case XXX. No. 90,404 (clinic). A young man presented a rather extensive dermatitis venenata on face and hands. No local treatment was given, and the patient given 1 cc. of poison oak extract intramuscularly. Two days later he reported considerable improvement. A second injection was given, but no local treatment administered. Two days later the patient returned with all lesions healed, or rapidly subsiding. No local treatment of any kind was given in this case, and the improvement was rapid.

Case XXXI (student nurse). A young lady came to the office with dermatitis venenata of two weeks' standing. Skin of arms and hands scaling, reddened and irritated from scratching. One cc. of poison oak extract was given intramuscularly, together with soothing lotion. Next day she reported a gradual reduction in the itching, so that she was very comfortable. No further treatment of any kind. She reported for the two succeeding days, but the lesions remained entirely well.

Case XXXII (student nurse). A young lady presented a dermatitis venenata of two days' duration, especially on the arms and face. Itching, burning and tingling over body very pronounced. Moderate edema. One cc. of poison oak extract given intramuscularly, together with a soothing lotion. Next day patient reported moderate improvement. No further injections were given. Two days later patient reported herself practically well.

Case XXXIII. No. 7456 (private). A young lady reported a moderate outbreak of dermatitis venenata on arms, neck and chest of one day's duration. Patient felt a sensation of tension and tingling all over body. She stated that she was subject to very severe attacks of dermatitis venenata. One cc. of poison oak extract was given intramuscularly, together with a soothing lotion. In about two hours, and before the lotion was

applied, patient stated that the itching was very much relieved. Next day she reported considerable improvement in local conditions, and no further spreading. A second cc. of poison oak extract was given intramuscularly, and the lotion continued. The following day the patient stated that she was entirely free from all discomfort, the lesions had subsided, and there was no further spreading.

Case XXXIV. No. 5606 (private). A girl, fourteen years of age, had acute dermatitis from poison oak involving the entire face, forearms and legs. She had been exposed three days previously. One cc. of the toxine was injected, and the next morning the inflammation subsided a little. Two days later she telephoned that her condition was much improved. We did not see her again, but her physician subsequently advised us that apparently the injection was not effective. The patient recovered within two weeks.

The poison oak toxine was prepared by George Broemmel, B. S., Ph. G., Ph. C., as follows: "A given weight of fresh crushed leaves of rhus diversiloba was covered with absolute alcohol, extracted filtered, and precipitated, and the precipitate dried at low temperature. Given weight of the toxine was dissolved in absolute alcohol and sterile water added. An arbitraary standard was set for the weight of the toxine, volume of absolute alcohol, and the volume of sterile water, but it is hoped to standardize the preparation soon."

To test the toxicity of this poison oak extract experimentally, Wm. W. Crane, a Stanford University senior medical student, recently utilized guinea pigs, rabbits and cats, and found that comparatively large doses were tolerated intramuscularly, intraperitoneally, and intravenously. As much as 3 cc. of this toxine was thus given, so it is evident that for human beings, much more than the 1 cc. of this preparation so far given would be tolerated.

Efforts were also made by Crane to produce poison oak dermatitis experimentally in young rabbits and guinea pigs with tender skin. The abdomens were shaved, and fresh leaves of the rhus diversiloba were crushed and rubbed in. No dermatitis resulted in any of the animals, and it was concluded that common laboratory animals probably have a natural or species immunity to this form of poisoning. When Crane's work is finished, it will be made the subject of his medical thesis, which will be published.

The results here observed seem to prove that the injection of this poison oak toxine is attended with no danger to the patient, and that it has a specific therapeutic effect in causing prompt amelioration of the symptoms. As for the question of immunity, this has been observed to follow the injections in some cases; but whether or not this immunity would have developed anyway cannot be decided at this time. It is believed by Strickler that this is a temporary tissue immunity.

Due consideration has been given the fact that any new treatment of any condition may be followed by apparent improvement of the subjective symptoms; but in these cases the patients not only felt better, but their lesions certainly improved in appearance in a very short time. Those cases in which no local treatment was applied also showed prompt rapid improvement. The occurrence of fresh lesions in remote parts of the body after injections of the extract, as observed in some of these cases, seems to indicate that the preparation has "a specific effect" on the patient. This impression is strengthened by the fact that in these cases there was no possibility that recent contamination could have been the cause. As for the behavior of the lesions after the injections, the amelioration of the subjective and objective symptoms was usually very prompt. The exfoliation and keratoplastic processes in the course of repair of the damaged skin should not be counted as part *of the disease itself*. Our experience has encouraged us to try this toxine out on a larger series of patients without giving any local treatment.

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RESULTS OF THE WASSERMANN TEST ON 1518 MEN AT SAN QUENTIN PRISON.

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The blood Wassermann test is a part of the routine examination of every man entering San Quentin Prison. Considerable data are thus available from which the following statistical study is made.

The present series is a review of the Wassermann tests performed on 1518 men entering the prison between April, 1918, and June, 1920. The total number showing some luetic involvement as determined by this test, performed at a reliable San Francisco laboratory, was 166 or 10.93 per cent. The details of the cases are as follows:

		Percentage of Total Cases	Percentage of Positive Cases
Total number of positive cases	166	10.93	
Total number cases showing an initial triple plus reaction	128	8.43	77.10
Number of cases which became triple plus after one or two injections of Arsphenamine	12	.79	7.22
Total triple plus cases.	140	9.22	84.33
Number of cases which at no time showed more than two plus	26	1.71	15.66

In the great majority of cases, no physical signs of syphilis were present. One man, however, had many syphilo-dermata, while in another case the development of a characteristic copper-colored eruption was the means of discovering a syphilitic re-

Note ← - Questionable negative reaction	Number of cases treated	Showed improvement in Wassermann reaction	Percentage showing improvement	Showed no improvement to date	Percentage showing no improvement	Number of injections of Arsenobenzol. The figures in the squares represent the number men receiving the injections. Number of injections 1	2	3	4	5	6	7	8	9	10	11	12	13	Totals	Average number injections received
Number of cases treated	139																			
Wassermann reduced from XXX to - at last report		51	36.69				4	4	9	10	11	3	4	2	3		1		285	5.58
Wassermann reduced from XX or X to - at last report		4	2.87			1		1	1	1									13	3.25
Wassermann reduced from XXX or XX to ← at last report		11	7.91					2	2	1	1	2	2		1				65	5.90
Cases which showed improvement but not yet negative		41	29.49			1	9	5	3	5	4	1	2	2	3	2	3	1	237	5.29
Cases which improved but later became XXX again				5	3.59				1	1		1			2				36	6.80
Cases which remained XXX thruout				27	19.42	3	5	5		2	2	4	4		1		1		132	4.88
Totals	139	107	77.53	32	23.02	5	18	17	16	20	18	11	12	4	10	2	5	1	768	5.33

action by a second test, the Wassermann test on entrance having been negative.

Of the 166 definite cases of lues, 18 or 10.84 per cent. had committed some sexual crime, while the remainder, or 89.16 per cent., were confined for variable non-sexual offenses; 67 (39.75 per cent.) were married, 99 (60.25 per cent.) single. The youngest man was 18, and the oldest 56 years, the average age being 32.24 years. One hundred and eleven (66.27 per cent.) admitted having had some form of venereal disease, 33.73 per cent. denied having ever suffered from such ailments. Closer study reveals that 54 (32.53 per cent.) had had gonorrhœa only, nine (5.42 per cent.) syphilis alone, while 46 (27.71 per cent.) admitted having had gonorrhœa and syphilis. The total who admitted having had a "chancre" or syphilis was 55, or 33.73 per cent. One hundred and sixty-one (96.99 per cent.) had never received anti-syphilitic treatment previously, while five had had treatments. One had taken mercury rubs, one mercuric injections, while three had received "606" intravenously.

Anti-syphilitic measures are compulsory here, the treatment being as follows: Twenty injections of arsenobenzol (Dermatological Research Laboratories, Philadelphia, Pa.) are given to as many men every Saturday. Owing to the large number of luetics in prison at a given time, each man receives an injection about every four to eight weeks. The interval is somewhat long, but time is not a great factor here as far as the men are concerned, and the ultimate results are in the main satisfactory. In the interim each man receives mercury rubs nightly for six days, followed by a week of rest. This procedure being continued as long as signs of lues are present or until symptoms of mercurialism appear. In giving the injections, two solutions are prepared, each containing 6 grams of arsenobenzol in 600 c.c. of sterile water. After neutralization with 15 per cent. sodium hydroxide 60 c.c. (containing 6 decigrams of the drug) are administered to each man by means of a blood transfusion apparatus devised by Dr. L. L. Stanley, resident physician, at this prison. This instrument consists simply of a small T-shaped metal tube, which can be attached to a Luer syringe and which contains ball valves so arranged that the fluid can be drawn in one arm of the T and discharged through the other. With this instrument a large series can be given in rapid succession. Before each injection sufficient blood is withdrawn for a Wassermann test, this affording an accurate and recent estimate of each man's condition and the effect of the treatment.

Records are kept in alphabetical order in a loose leaf folder so that the Wassermann reaction, the number of treatments, etc., for any given case can be ascertained at a glance.

The above chart shows in detail the results of treatment and the number of injections required.

One hundred and thirty-nine men in the present series received treatment here. The majority of the 27 receiving no treatment were transferred to some other institution, while a few had pulmonary tuberculosis and were therefore given no injections, previous experience having shown unfavorable results from treatment in such cases. As judged by the Wassermann reaction 107 (77.53 per cent.) have to date shown definite signs of improvement. The figures are specific, but at best they should only convey a general impression. Some of the cases which show improvement now may later become positive again, but on the other hand it is reasonable to assume that many of those which are listed as triple plus throughout will later develop negative reactions, as it may be noted that 13 of the latter have to date received only three or a less number of injections. A few remain "Wassermann fast" in spite of prolonged treatment, no adequate reasons have yet been put forward to explain these cases. In this connection it may be noted that the reliability of the Wassermann test as an indication of the patient's condition has been seriously questioned by some, it being claimed that certain cases though actually cured of their infection will still give a positive reaction. Another

point of interest to be noted is that 31 (22.30 per cent.) of those which showed improvement, first gave a negative reaction followed by a positive one again before a final negative, or at least a reduced Wassermann resulted.

During the administration of more than 768 arsphenamine injections, there were less than 20 untoward reactions. In these cases the patients almost immediately after the injection went into a more or less severe state of collapse or shock, with nausea and vomiting, weak, rapid and irregular pulse, and respiratory difficulty, with a temporary accompanying edema and cyanosis of the face and neck. The most severe case responded almost immediately to strychnin and was discharged from the hospital the next day. There have been four cases of jaundice following the giving of the drug, usually quite marked, but in three instances with no other symptoms beyond vague, slight gastrointestinal disturbances, duration from several weeks to a month or more. One case, however, after one injection developed a gradually increasing jaundice, and after an illness of five weeks died in coma. Autopsy showed marked degenerative changes in the liver.

As judged from the above series, the following conclusions may be made:

1. The Wassermann test should be made a routine procedure in all complete medical examinations.
2. A negative history and physical examination does not preclude the possibility of lues being present.
3. The treatment as outlined above is an effective and practically safe method of bringing about a negative Wassermann reaction.
4. Five or six injections, accompanied by mercury rubs extending over a period of from one to two years are usually sufficient to bring about the desired result.
5. A small percentage of cases show no improvement in spite of prolonged treatment.

ANTE AND POST-OPERATIVE TREATMENT

By C. L. LOWMAN, M. D., Los Angeles.

The last five years has emphasized and disseminated, more than the previous twenty years, many features in surgical treatment which orthopaedic surgeons have been using for a long time. Preventive measures, ante-operative, and post-operative measures, are based on the functional outlook with definite relation to future function and efficiency. Previously there was a general tendency on the part of many surgeons to be so deeply interested in the pathological process and the technic of the surgical procedure to be used in its eradication, that the question of physiological disturbances of function was given little consideration. Without minimizing the value of a thorough knowledge of pathology, it has been very evident that things functional have received comparatively little attention.

The time is coming when all patients with more or less chronic conditions, will receive thorough consideration in respect to both functional and pathological conditions in the sense that active procedures aimed at correction of both conditions will be instituted. For instance, a woman with uterine prolapse will be examined anatomically for location of static faults, and physiologically for disturbances of organic balance. When this is done, there will be less operating for backaches and neuritic conditions before other obvious faults are corrected. It is a matter of common occurrence in orthopaedic practice to have patients referred, for leg and backache, give a history of one or more pelvic or abdominal operations having been done in an effort to relieve their symptoms, when they have never been stripped and examined to ascertain whether there were faults in their static alignment. Many of these patients give perfectly clear histories which evidence this static strain and the chain of neural changes which often accompany it.

The fact that actual organic disease exists, only emphasizes the fact that every added pound of energy which the patient possesses must be conserved to aid in overcoming it. Consequently, each system of activity in the body must have due consideration: circulatory, respiratory, eliminatory, mental and neural—especially sympathetic—endocrine, muscular, and bony. The last is not the least by any means.

The reason that so many chronic cases stay chronic is largely due to the fact that they are not completely gone over and all the points of nerve leakage ascertained. It is quite common to see patients who are struggling against some infectious or other pathological handicap, carrying a mechanical overload of twenty per cent. due to bad statics. This is frequently seen in bed patients as well as ambulatory cases. It is perfectly feasible not only to maintain proper bed postures, but to keep up muscle tone and nerve tone and aid physiological processes by properly applied physical and therapeutic measures.

I have maintained for years that the time would come when each hospital would have a gymnasium and physical therapy department for use in keeping up the efficiency of the hospital personnel as well as for use as a definite part of the therapeutic equipment. This prophecy bids fair to be realized, for it is reasonable to suppose that the physio-therapeutic departments in military hospitals have come to stay, and already some have been established in civilian hospitals.

Immediate operations are necessary only in acute cases, and consequently there is usually ample time during which to establish a regime of physical supervision, by which I mean attention given to all physical needs, both for correction and prophylaxis. To illustrate: A middle-aged woman, mother of two children, presents herself for pain and neuritic symptoms in the upper back and shoulder regions. She has considerable disturbance at her menses, her back being worse at that time, and she had considerable low-back pain during her last pregnancy. Since nursing the last child, she has not regained weight nor strength, has occasional attacks of insomnia and suffers from indigestion and constipation.

Examination of pelvic viscera discovers a considerable degree of relaxation and prolapse with

bogginess and congestion of uterus. Operation for some form of suspension or fixation is advised. This is obviously necessary, but it is equally obvious that the patient's general condition is not good, and a little reflection will show that the symptoms for which she presented herself may or may not be cleared up by this operation unless proper attention is given to the rest of the faults, such as the neural condition due to bad statics, overstrain and the dysfunction of the abdominal viscerae.

The patient has placed herself in the surgeon's hands to have her health and efficiency restored to normal. After a number of months of dragging around in a semi-invalided condition, should she be subjected to the shock of a major operation, the increased static strain, and the weakening effect of lying in a hospital bed, and be sent home in three weeks with wounds healed? Just this is occurring day after day in all our surgical centers. The patient is often sent home and told to take it easy for a few weeks and report occasionally to the surgeon. Is the patient normal, or has she been restored to her maximum efficiency? Will Nature do for her what the surgeon hopes or expects? Even though the temporary respite of the rest in bed and freedom from household cares has greatly improved her general condition, will she regain the degree of health and efficiency which should be hers?

Just how far should the surgeon's responsibility go? Let us say, for instance, that the surgeon notes such facts as follows:

Static faults: Drooped shoulders, wide prominent scapulae, long relaxed back, pendulous or heavy breasts, lowered abdomen with hollow epigastric area and perhaps some slight pelvic tilt and pronated ankles.

Mental condition: Worried and anxious, disposition changing, periods of depression.

Neural condition: Prickling, tingling, and numbness over shoulders and down the arm, after sewing or reading or on efforts at concentration, arms feel heavy and pain in back increases, periods of insomnia.

Circulatory condition: Feet and hands cold, especially in the morning, efforts at walking fast make her short of breath and heart palpitates; pulse ninety-four, standing.

Digestive condition: Usually constipated, occasionally a dull right-sided pain with soreness over the pit of the stomach, some gas and odor, sensitive to pressure over the epigastric area and in region of pelvic inlet and over the ovarian region.

Endocrine condition: Hair rather dry and brittle, teeth soft during pregnancy, skin dry.

Menstrual condition: Breasts a little sore and heavy, cramp and pain a day or two before flow is established and relieved when flow appears, some low backache at this time aggravated by too much activity, especially continued standing.

Pelvic findings: As stated above.

It is noted also that the patient is wearing a loose, ill-fitting, short-waisted corset, and ordinary conventional shoes with narrow toes, round soles and Cuban heels.

These are, roughly, some of the most salient symptoms, and the chances are that the case would usually be termed, "An ordinary case of neurasthenia, resulting from overstrain and made worse, if not caused, by the reflex disturbances excited by the pelvic pathology."

Now let us see what ante-operative procedure of, say, two months' duration will do for this case. In the first place, packing and internal support for the pelvic condition to reduce congestion, weight and ligamentous strain, and its incident reflex irritation through the sacro sciatic sympathetic plexus; attention to faulty statics, rebalancing, proper shoes with broad heels not higher than one to one and one-fourth inch, flat soles, inner border of heels raised one-eighth inch to take muscle strain off the tibial group and the external thigh rotators (which fasten in and about the pelvis); a small sitting-pad from one-fourth to one-half inch thick under the low side to correct the lateral pelvic tilt; a proper corset with a high back that comes up over the scapulae, snugly fitted, the flare at the top of the corset being removed, extra darts made under the scapulae and in the pelvic zone, and skirt on either side in front under the abdomen so that when the laces are pulled up behind, the front will give an abdominal lift; gussets inserted under the bust down to and through the waist line, relieving the pressure made by the dart taken up under the scapulae, thus making a point of release opposite the point of pressure; shoulder straps passed through carriers placed beside the eyelets behind and passing under the arm around over the shoulders crossing the scapulæ to the opposite side and brought downward and forward across the waist line to fasten to a buckle attached on a level two inches inward from the anterior superior spine.

The crossing of these straps will hold the scapulæ inward and backward, relieving the strain on the rhomboidei and trapezii, realigning the shoulder girdle, and probably controlling largely the neuritic symptoms in this area. With the spine straightened the abdominal viscera are lifted, the ribs raised, respiration, circulation, and elimination are all favored, and the ligamentous and muscular overload is placed on the bony framework where it belongs.

This attention to static strain will at once restore ten to twenty per cent. of the nerve energy previously wasted by making muscles and ligaments do the work the bony structure should do, and by removing in part obstacles to proper physiologic functioning of the visceral organs.

Mentally, you have at once gained the patient's confidence and interest by attention to these fundamental things which she can easily see. The immediate response to these measures insures her faith in you and she knows she is going to get well.

A high percentage of such cases get relief from many of these symptoms within a few weeks. They eliminate better and consequently sleep better, their toxic elements are reduced, and the vague neuritic sensations begin to disappear. It must be explained to them, however, that the greatest benefits will come from efforts to work

with Nature, and attention to all hygienic and dietetic laws will bring its reward.

Activity and rest must be prescribed definitely and specifically in accordance with the physical limitations of the individual and in accordance with the stage of the abnormal conditions present.

Naturally, absolutely fixed rest would be indicated in acute and subacute conditions, whereas moderate exercise may be allowed and prescribed in the more chronic cases. The patient must be told that all these procedures are to rest the various structures and to prevent and break the old, bad postural habits; consequently, to begin the building up processes certain exercises to strengthen the weakened structures will be necessary. These need only be simple, slow movements with deep breathing, but should be given lying down.

In this particular type, gentle, resistive exercise, with a rest of from one-half to one minute between every three or four movements, will gain the best results. This will slow the heart rate and increase the muscle metabolism without any production of strain or fatigue. In heavy individuals, shorter, more rapid and more active exercises would be of value, but should also be given lying down.

Rest positions. Preferably the patient should sleep on a hard mattress with only a very small pillow or none at all, and the foot of the bed raised six to eight inches. Two or three times a day the patient should assume the Goldthwaite position, which has all the advantages of the knee-chest position and none of its disadvantages. It is assumed as follows: Patient to lie prone with the pelvis and legs supported on bed or couch; upper trunk, head, and arms resting on a chair or box, the level of which should be six to ten inches lower than the level at which the pelvis is held. If the pelvis is not allowed to slip off its support, no strain due to curving forward in lumbar region will result. At the same time the dorsal kyphos will be passively corrected. If it is desired that air enter the vagina in order to allow correction of the pelvic viscera, the legs can be separated without influencing the back position. This position should be maintained for thirty minutes two or three times a day. The patient should refrain as much as possible from all activities which produce strain from concentration, such as watching exciting "movies" or anything requiring fixing of the attention. Such activities produce back strain, especially in the cervical, dorsal, and shoulder girdle area. They must realize that more consideration must be given to preparing themselves to go through the operative procedures, and temporarily the simple life is best.

Next, operation. We will say this is performed with good result. The patient's back has been supported on the operating table and consequently no strain and stretching has occurred. She is placed back in a bed from which the vicious sag has been removed, and later she is not allowed to use, except for very short intervals, the equally vicious back rest which strains all the back and pelvic muscles and allows the relaxation of the cervical fascia, the mesenteric attachments and the intrapelvic ligaments. The foot of the bed is kept elevated.

As soon as the wound is healed and less sensitive, a soft pad is placed over it and the corrective posture corset which the patient previously wore is put on, supporting the abdominal wall, keeping the spine in proper alignment and preventing the downward pressure of lowered abdominal contents from interfering with or jeopardizing the operative results.

The patient goes home without having experienced much shock. The danger from infection has also been reduced. She has had little or no post-operative backache from sacro lumbar and sacro iliac strain. Her convalescence is shorter and more satisfactory than the average case. As soon as she is strong enough, she begins her exercises again. First in the lying position, later in the sitting position, but not in the standing position. All exercises which would interfere with the operative measures are eliminated, but special attention can be concentrated on the correction of shoulder girdle and upper back, and the foot and leg positions. The patient reports frequently for advice along the lines of physical supervision. She will need to find out about increasing her activity and to have corset inspections and alterations as her body changes take place. The abdominal girth will get smaller, necessitating additional darts in the pelvic zone. The increased depth and width of the upper abdominal region requires enlarging the corset in that area. Improvement in strength of back muscles and better carriage will later allow the removal of the shoulder straps or else a new corset may be worn occasionally for social wear. If the breasts are heavy and tend to drag the shoulder girdle downward and forward, a breast support such as I have described in another article will be of service, both in preventing this dropping of the bust and in holding the scapulae backward in a better position. When this is worn, the high back corset is no longer necessary.

This procedure may have to be carried out over considerable time, possibly for one or two years. That is, there will be occasional consultations for advice along the line suggested. However, this line of follow-up work is as valuable to the surgeon as it is to the patient in that he has an opportunity to watch the results of both the operative and non-operative aspect of the treatment. His reputation is bettered in that he becomes known as one who is thorough, careful, and appreciative of the many minor functional disturbances that the women folk of our times are heir to. It will also suggest another step for him, namely, to begin inspecting the children of these same mothers with an eye to correcting the potential defects and abnormalities which heredity and environment have wished upon them. He will thus be doing more constructive work and preventive surgery than he could possibly accomplish with his knife.

AMEBA-LIKE LEUCOCYTES IN NORMAL BLOOD AND IN PUS

By HERBERT GUNN, M. D., San Francisco

In cases where there is a question as to the character of motility of bodies suspected of being amebæ, the statement is frequently made that pseudopodia are never seen excepting in amebæ. That such a belief is incorrect, and may under certain conditions lead to error, the following observations tend to show.

The finding of a small motile ameba in the urine of a patient, recently apparently cleared of an intestinal amebiasis, who suddenly had an attack which resembled a liver abscess, suggested the search for amebæ in the blood stream. This patient had no symptoms referable to the amebæ in the bladder and nothing in the lower abdomen to suggest a direct infection.

The examination of the fresh blood on a warm stage showed cells exhibiting all of the characteristics morphologically of amebæ. The picture was so striking that I was able to demonstrate it as a blood infection with amebæ to Dr. P. K. Gilman, who has had years of residence in Manila and who is thoroughly familiar with intestinal amebæ, and to Dr. Alfred C. Reed, for years a practitioner in China and now lecturer on tropical diseases in Stanford University.

An imediate examination of controls, dysentery cases and normal persons, showed the same cells present in all. The blood was obtained by the ordinary method used when examining unstained specimens for malaria—a small drop on a slide covered with a cover slip, the edges of which were sealed with vaseline. The smear should be thin so that the central portion appears as a single layer of red cells and the examination made on a warm stage with a one-sixth or oil immersion lens. The examination may be made immediately but more characteristic forms and greater motility may be demonstrated after an hour or two has elapsed.

Sluggish motility has been observed after seventeen hours. Changes in shape with the flowing of the granules and the progression of the cell may be seen in many cells. In individual cells distinct clear hyaline pseudopodia may be observed, broad or fingerlike and assuming all of the shapes seen in amebæ in the stool. The pseudopods may protrude slowly or shoot out suddenly at one or several points.

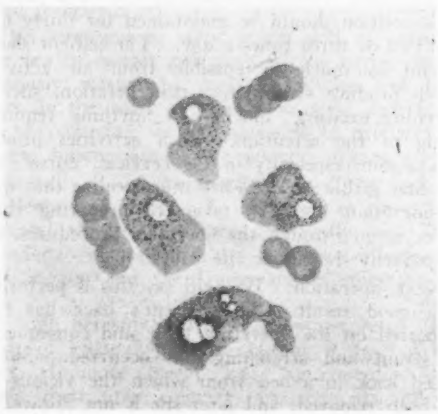
In many cells there is no definite ectoplasm to be seen while others show a distinct endo and ectoplasm. In many cells there appears to be a clear ectoplasm but with progression of the cell in the opposite direction.

The clear hyaline pseudopods are sometimes very indistinct and readily overlooked. The endoplasm may be finely or coarsely granular but nuclei are not clearly in evidence.

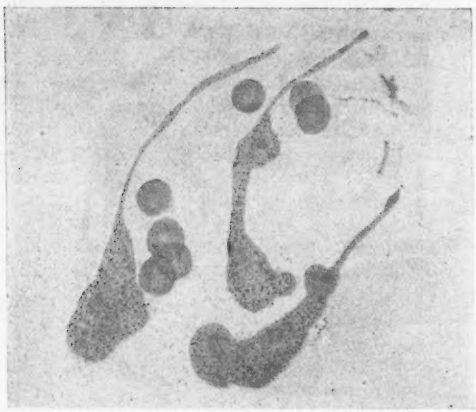
There is considerable difference in the activity of cells from different persons, some being much more active than others. Smears from the blood of some of these cases stained with Wright's stain showed the normal picture and it was impossible to stain any cells in the odd shapes assumed while active.

No. 1—Changes in shape of a leucocyte during ten minutes.

No. 2—Showing clear ectoplasm, pseudopodia and changes in form.



No. 3—Actively motile vacuolated forms.



No. 4—Fantastic shapes assumed over period of ten minutes.

No. 5—Very active leucocyte. Note size compared with red cell.

No. 6—A minute leucocyte, very active.

In pus cells obtained from various sources, intestinal tract, arm, etc., it was possible to demonstrate motility in a few cells but of a different character entirely from that seen in the leucocytes from the blood. In the pus cell there appeared to be a change in shape but no flowing of the granules could be made out and there was no progression. A close scrutiny of these motile cells showed an occasional one extruding a distinct hyaline pseudopod. The nuclei were invisible in some of the motile pus cells and apparently they were polymorphonuclears.

The quesion naturally arises is it possible for the leucocyte under favorable conditions to show all of its characteristic motility after it has left the blood. If so it might explain many peculiar findings reported in the past, similar to the above mentioned bladder infection.

The probabilities are that sluggishly motile leucocytes, assuming as they do at times, bizarre forms are accountable for some of the reports of amebæ or ameboid bodies found in unusual locations.

The drawings were made by Mr. Sweet, medical artist, and are all from the blood.

350 Post street.

PLASTER CAST IMMOBILIZATION OF FRACTURES PRIOR TO OPEN OPERATION FOR REDUCTION OF SAME.

By NEWTON T. ENLOE, M D., Chico, Cal.

The object of this paper is to state briefly the advantage of immobilizing fractures in plaster casts a week before attempting the open operation for the reduction of same, and to give the technic of preparing the field of operation which has to date given 100 per cent. clean wounds.

1. A great many fractures reduced by open operation can not be held in proper position after being reduced while the plaster Paris is being applied and allowed to harden, except when held together by some foreign material.

If we operate through a window of an already hardened cast the fracture, when reduced, will usually remain in position without the introduction of plates, screws, wire or other non-absorbable foreign material. This is a very great advantage. Any surgeon doing bone work knows well the disadvantage of using any of the many foreign materials and would prefer to leave them out when apposition can be maintained by any other means.

2. After the fracture is exposed we find the limb (or site of the fracture) is held firm by the cast extending above and below the joints nearest the fracture. This enables the surgeon to apply the lion-jaw forceps, or any other instrument he may choose, to reduce the fracture with very slight effort. The lower edge of the window through which the operation is being performed is a fulcrum upon which to rest the forceps. If extension be necessary and can not be given by an assistant by traction on the limb, an instrument can be placed between the forceps about three inches from the bone (the best instrument being a double end automobile wrench) and by bringing the handles of the forceps together the ends of the bones will separate; and by rocking in any direction desired on the lower edge of the window

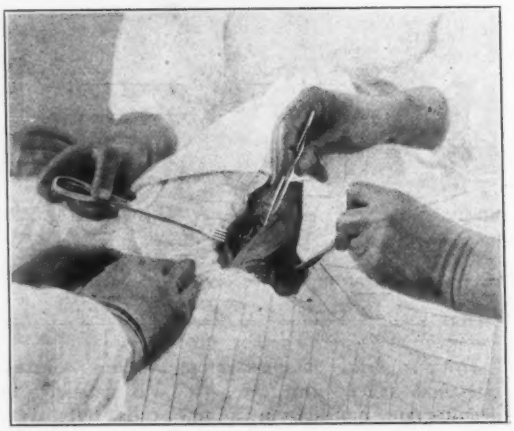
1. Closed cast showing window in position ready for operation.

2. Window removed showing gauze saturated with benzoin.

3. Rubber dam applied and held in position with adhesive plaster.

4. Benzoin dressings removed.

5. Shows ulna in position without use of any foreign material.



6. Operation in progress showing both ulna and radius exposed with ample room for work.

(fulcrum) there is practically no effort in placing the ends of the bones in perfect position. In the majority of cases they will remain so without internal fixation by any foreign material.

There is far less danger of injuring the bones or soft tissues with the forceps, for the reason that at all times one has complete control over the instrument instead of endeavoring to set the bone in midair with the flimsy support of assistants or the Hawley table.

I do not wish to give the impression that the Hawley table or assistants are not useful, since both are indispensable in the application of the cast preparatory to operation. Having the field of operation supported in plaster and the cast resting on a firm support, changes a very difficult task to a relatively simple procedure.

3. No surgeon, however skilled and experienced, can be sure that the cast he applies immediately after operation will not be so uncomfortable as to require readjustment such as may endanger his result. The application of the cast long enough before operation to permit it to dry thoroughly insures that immobilization will not have to be interfered with after operation on account of an uncomfortable cast. When our plan is followed the patient has had time to get over the initial period of discomfort during the first four or five days after the application of the cast before he comes to operation. If there should be anything wrong with the first cast applied, its removal and the application of another is a simple matter before operation,—not so afterward. Restlessness of the patient, due to cast discomfort, is a menace to the operative result, and this is avoided where the cast has been applied long enough before the operation for the patient to become accustomed to it. This is especially true when a body cast is used.

4. Probably the greatest advantage of applying the cast before operation is that it lessens the liability of infecting the field of operation. Anyone doing bone work knows how difficult it is to hold the towels and sheets in position when operating upon a fractured femur or humerus—in fact, any of the bones. The surgeon holds the fractured ends in midair with whatever clamps or forceps he prefers, and while the assistants hold the limb as steady as human help can, the surgeon just about gets the bones in position when some wave or motion (not the fault of anyone in particular) causes the bones to slip and drop out of position, probably just opposite to where they were originally. Every time they slip they wound tissue, sometimes injuring important vessels. During this strain the sterile dressings and sheets which once protected the field of operation, slip out of position and often unnoticed by the surgeon who is using all his energy, both mental and physical, to reduce and retain in position a fracture which, if operated through a window, would entail small effort.

The slipping of the sterile sheets is often the cause of infection; these sterile dressings can be sewed or clamped to the skin surrounding the field, but the extreme exertion required to reduce the fracture sometimes tears them loose.

5. Contrary to the first impression every surgeon seems to get, there is ample room in all cases to operate through a window. The limb is held firm in the cast and does not roll to and from the operator. Consequently, when working through a window there seems to be about twice as much room as in *the same sized incision* where no cast is used.

6. Just as soon as the operation is completed the anesthetic can be discontinued, the patient placed in bed without fear of undoing the surgeon's work or breaking the cast before it becomes firm.

THE TECHNIC EMPLOYED IN PREPARING THE FIELD OF OPERATION

The field is cleansed with soap and water and shaved. It is then thoroughly dried and covered with sterile gauze the size and shape of the proposed window. The gauze is then saturated with comp. tr. benzoin; sheet cotton is applied over the surface to be covered with the cast, and the cast applied, the limb being held in as nearly a normal position as possible. While the cast is hardening the window is cut but is allowed to remain in place. On the morning of the operation the window is removed, cotton cut away and pulled from the edges. Dental rubber dam is tucked under the cast on all four sides, stretched over the cast and held in place with adhesive strips. The benzoin-saturated gauze is removed and the field painted with tr. iodin and alcohol, equal parts. This is removed with 95 per cent. alcohol and sterile towels are tucked under the edges of the window and turned back over the cast. The other operating sheets are placed over the patient; the incision is made through the skin and superficial fascia and the towels sewed in to protect the wound from possible skin infection. The operation is then continued in the usual way.

Before beginning to close the wound tr. iodin and sterile water (10 per cent.) are used to cleanse the wound. It is then thoroughly dried and closed; comp. tr. benzoin dressing is used, the window replaced and held in place with bandages of adhesive plaster. If the wound be previously infected, it is first cleansed with tr. iodin and alcohol, equal parts, followed by alcohol and then sterile water. The wound is dried, filled with comp. tr. benzoin and closed, leaving a small opening for drainage, but no drains are used.

As a rule, the wound is not dressed for ten or twelve days, even though it has previously been necessary to dress it daily, provided of course that all points of infection have been reached by the solution.

In the last six months the author has had three cases of infected wounds with non-union of bones that have resulted favorably with the employment of the above technic. No case required more than three dressings, in spite of the fact that all of them had required dressings every other day for a month prior to operation.

SUMMARY

The advantages claimed for the above described method are:

1. Easy reduction during operation. (The cast provides a fulcrum for leverage.)
2. Danger of wounding the tissues by slipping of unsupported fragments is done away with.

3. The introduction of non-absorbable fixation materials is made unnecessary.

4. The danger of infection of the field by the slipping of dressings during operation is much diminished.

5. Postoperative comfort and quiet are assured.

6. The surgeon is saved much agony of spirit and waste of physical energy.

P. S.—Since writing this article I have dispensed with the sewing in of towels after making incision through skin and fascia, but instead paint with Tr. Benzoin Comp. with equally good results.

TRAUMA—ITS RELATION TO NERVOUS DISEASES OF UNDETERMINED PATHOLOGY*

By JOSEPH CATTON, M. D., San Francisco.

In assigning to trauma a causal place in relation to diseased conditions, it has too often been a fact that medical men have dealt with the subject with absolute empiricism. What has been true in this connection, as regards medicine in general, has been true, likewise, as regards neurological medicine. Physicians who are scientific, those who demand pathologic cause for symptomatic effect, must satisfy certain definite criteria in their minds before calling trauma a factor in the production of a given disease. This paper will consider but one of the class of nervous diseases, whose pathology has not yet been definitely and finally determined. Such consideration as is given to this particular disease and its relation to trauma, may be applied, in toto, to the other neurological conditions of undetermined pathology.

This communication concerns itself with the syndrome of tremor-rigidity-paralysis occurring in persons who present, neither clinically nor pathologically, lesions of the cortico-pyramidal or peripheral nervous mechanisms. This syndrome is seen most frequently, and reported as Paralysis Agitans, but it also forms the nucleus of the picture of Juvenile Paralysis Agitans, of progressive lenticular degeneration (Wilson) and of progressive atrophy of the globus pallidus (Hunt); and it may be added at times to certain other neurological pictures. The relation of trauma to these disease pictures will be considered. Further, trauma will be thought of in a narrow sense in order that there may be more of definiteness to the consideration and a greater possibility of agreement as to certain of the relationships.

Trauma, then, will refer to physical injury rather than to either psychical shock or any one of the unlimited number of generalized diseased conditions which might be included in a more comprehensive idea of trauma. While neurologists are interested in the relation of trauma to neurological conditions, including Paralysis Agitans, from the academic and the scientific standpoints only, they may be satisfied with slow progress and withhold opinion indefinitely about these relationships. However, in certain instances, for example when a case is to come before an Industrial Accident Commission or a court, if physicians do not have definite opinions, or if their opinions are at variance, then the lay judge, jury or board can, and will decide that trauma did or did not cause the Parkinson, or other neurological pictures, as the case may be. It would seem, therefore, very proper to check up the scientific data on such relations as are under consideration. Industrial medicine makes these problems immediate; medical men should solve them. Two cases are presented for discussion this evening.

Case A. Male, age 51, white, American; lumberman. Family and past history not remarkable. Cut his middle and ring fingers, right, with a circular saw, March 6, 1920. On March 8, 1920, he was given general ether anesthetic, and fingers amputated. It was reported that he came out of the anesthetic poorly, and had Cheyne-Stokes breathing and was semi-conscious for some time; that during the next day it was possible to arouse him, but if he were left alone he would lapse into a comatose state. On the second day he became entirely conscious, but was noted to be stupid, and to have had a marked slowing of all his mental processes. His blood pressure was found to be low, but there were no other remarkable findings. Soon there came a weakness of his right arm, and then of his left arm and the lower extremities. The weakened members began to show some rigidity. One examiner reported on April 30, 1920, positive Wassermann in blood serum, and that the spinal fluid showed pressure of 400, 54 cells and positive Nonne, Noguchi and Ross Jones tests, and positive Wassermann. He administered a few doses of salvarsan. He felt the case was one of early paresis. On May 21, 1920, another examiner found the symptoms to be due to organic brain disease, but could not confirm paresis. He reported negative Wassermann in the blood serum, and spinal fluid negative to all tests. He was seen first by present examiner on August 24, 1920. He complained of the slowing of his mental processes, of occasional night sweats, hot feelings, slight deafness in right ear, stiffness of legs and dragging of feet, stiffness in arms, difficulty to start or to stop walking, had early repeated incontinence of urine; has become costive; had crying spells; did not speak much; a nocturea of i to ii increased to iii after the accident and operation; there had been some oedema of feet during two months. He denied having had any of the muscular symptoms before. Likewise, he denied at time of examination that he had any other remarkable symptoms. Physical examination showed him to look six years older than the stated age, fifty-one; greasy skin on face, losing hair, almost all teeth missing, accentuated second aortic heart sound, B. Pr. 123-83, partial amputation of middle and ring fingers, right, and no other findings. He showed some deafness in both ears, mainly right. Mask face, generalized muscular weakness, very slow voluntary movements, generalized rigidity of musculature of extremities, trunk and neck, the rigidity being most marked in the order, right arm, left arm and left leg. There was a slight increase in muscular irritability. No tremor was present, but at times the patient moved his thumb right across his index finger in a manner not unlike the excursion of the paralysis agitans tremor. At other times he drummed with his index and middle fingers of each hand. There was some slight swaying on testing Romberg, but no other changes in sensory examinations. His achilles jerks were not gotten, otherwise all reflexes were present and normal, and there were no pathological pyramidal tract signs. The psychiatric studies brought out the marked slowing of cerebral processes, especially of motor initiation. His wife stated that he had grown childish; there was some dysarthria. The urine at times has shown small amount of albumin. The other laboratory findings have already been mentioned.

The case has been seen at intervals since; the condition has been practically stationary, but the

* Read before the San Francisco Neurological Society, April 1, 1921. From the Department of Neurology, Stanford University Medical School.

mental condition and the gait have improved slightly, and at times coarser motions of the right thumb are replaced by pill-rolling tremors.

Case B. Male, white, German, age 57; lumberman. With a family and past history which is not remarkable. States that he was entirely well until August 10, 1920, when he fell from a pile of lumber about eighteen feet high, striking his right shoulder, both hands, left foot, right arm and back of neck. He was bruised in these locations, but denies having had any other symptoms. He was not unconscious. Head X-rays were negative, and no remarkable pathology was demonstrated by physicians. Soon thereafter he was noted to have become quiet, slow and stupid, whereas formerly he had been jolly and active. He developed a muscular weakness, generalized, but more marked in extremities, and more so in the right arm. Then came rigidity in arms and legs, most marked in right arm, and a tremor so that his thumbs were rolled persistently across the palmar surfaces of his fingers; a shaking of his arms and legs and sometimes generally; a shaking of his mouth and head; occasional headaches; pains across lumbar regions and in lower neck; generalized aches and occasional paraesthesiae in right hand; qualitative changes in taste, smell, hearing and sight. Appetite has increased, but thirst is normal. More costive since accident. He has had nocturea iii to iv for past several months, and sometimes oedema of feet. He denies having had any of these symptoms before the accident; neither has he any other symptoms than those that have been mentioned at this time. Physical examination showed some pallor, dry skin on upper posterior arms, poor teeth. B. P. systolic 160-100, puffy hands, and no other remarkable findings. Eye examinations were negative. There is some disturbance of hearing, smell and taste. He walks with lack of co-ordinated arm swinging, and with the whole body held somewhat rigid. No propulsions present in any direction. Face was mask-like, but at times he smiled; no laughing. He showed tremor of eyelids and mouth; and rocking of head; and typical plli-rolling tremor of hands. There was a rocking of the lower jaw on the upper. There was weakness and rigidity of all four extremities and of the back musculature, these findings being more marked in the right arm. Sensory examinations were entirely negative. There was slight increase in intensity of deep reflexes; all others present and normal; no pathological reflexes. Says he has sweat less since the accident. Psychiatric survey developed no remarkable findings. Urine, Wassermann, and complete spinal fluid examinations were negative.

It is not claimed that either of these cases fits the classical picture of Paralysis Agitans, either as regards development or in symptoms presented. It is claimed, however, that the nucleus of the syndrome is there in conjunction with other symptoms. And there are specific questions to be answered concerning the cases. Did the accident to the fingers, the anesthetic or the amputation in Case A, initiate or make worse such pathology as is, at the basis of the symptoms presented? In Case B, did the fall and general bruising of the right side of the body produce or exaggerate the picture seen?

Attention need only be directed to the lack of confirmation of various alleged pathological bases of the shaking palsies to place them outside of serious consideration. The seat of the disease has been placed in various portions of the brain, cerebellum, spinal cord, peripheral nerves and muscles; the parathyroids have been claimed to be related. The pathology alleged has included hemorrhages, small eneurisms, perivascular infiltrations of a vascular or gliomatous sort and senile changes and others. Sufficient careful work would seem to have been done by Jelgersma, Lewy, Manschot, Auer, McGouch, Hunt, Wilson, and others, to indicate that the basal nuclei, and especially the lenticular nucleus when the seat of pathology, may give rise to the syndromes under consideration.

Before proceeding with a determination of the relationship of trauma to the tremor-rigidity-paralysis group, one must accept either the position that the pathology is unknown, or that it has a definite localization, e. g., in the basal nuclei. It would seem that to hold, at this time, that its localization elsewhere than in the basal nuclei has been demonstrated, would be impossible; it would seem that either the corpus striatum pathology or the absence of any demonstrated pathology would be the only alternative positions, with such data as are available.

The two positions will be applied to the cases presented. These cases are similar to those which have gotten into the literature and have resulted in there being a relation alleged as between paralysis agitans and trauma. The disease has been alleged to have developed immediately after falls, injuries to nerves, stabs, contusions and fractures. Usually, a connection between the part injured and the earliest symptoms has been reported. Trauma has been alleged to speed up the progress of a paralysis agitans, once begun. There has been a concensus of authoritative opinion that the disease, even following trauma, has appeared only in an already diseased nervous system.

Bailey has said, in effect, that with the data at hand it is impossible to explain the genesis of Paralysis Agitans of a traumatic type further than to note the sequence of events, and to infer that the injury stands in some causal relation to the disease. The writer has found no recorded case in which trauma has been alleged to be the cause of the disease and in which post-mortem findings have shown that trauma was actually the cause, or even a contributing factor. Trauma has not been reported as an etiological factor in any of the cases of primary degenerations in the region of the corpus striatum.

If the pathology is non-localizable, if it is to be considered a vague and general something or a systemic condition, then medical men may state that cardiac and nephritic cases and others are seen to progress more rapidly after injury. Or, such experiments as those of Ehrnzooth may be quoted, in which animals with head injury are reported to be more susceptible, both locally and generally, to the injection of pathogenic bacteria. Statements are made that local, or rather general, trauma may be followed by circulatory and nutritional changes, and that in turn there may come toxemia and elective degenerations of certain portions of the nervous apparatus, and that these degenerative processes are the basis for some of the chronic and progressive neurological syndromes. No report is found which ascribes to trauma the role of being a necessary or even the sole factor in the production of tremor-rigidity-paralysis pictures. When physicians cannot state that trauma has caused a condition, they should be careful that their

answer "No" to the question, "Can you deny that trauma could cause this condition?" does not lead to an opinion by laymen that trauma did in fact cause the syndrome. Then, in unscientific fashion, one more case may find its way into the books where trauma and paralysis agitans have had an alleged relationship.

When one accepts the tremor-rigidity-paralysis syndrome as due to pathology in or about the corpus striatum, reasoning may be much more clear on the relationship under consideration. Essential and primary degeneration of the lenticular nucleus has been associated with the Wilson syndrome; similar degenerations of the globus pallidus (Hunt) have accompanied paralysis agitans pictures, especially in the juvenile type of the disease, and Hunt, Wilson and others have pointed out that in this region varying pathologies may give varying symptom pictures with tremor-rigidity-paralysis as the nucleus.

With definite pathology location, more definite relations have been and can be worked out. Trauma has been apparently demonstrated as an exciting cause in paresis, tabes and progressive muscular atrophy. It has been considered even more determining in traumatic types of meningitis, brain abscess, epilepsies and psychoses. And, lastly, and not without great importance, trauma has been definitely proven to cause intercranial hemorrhages with or without brain lacerations, and these hemorrhages have been found within the brain substance as well as extra- and sub-durally. Studies on brains, the seat of injury, should be made to determine whether trauma to the head may be the exciting cause of hemorrhage into the basal nuclei, especially where there was pre-existing vascular disease. Further, it should be determined whether trauma might influence in the direction of progression, new growths, inflammatory and degenerative processes in the same regions. Naturally, before opinion of this sort could be countenanced, there should be satisfaction of certain scientific criteria. How a trauma to the arm could cause the appearance of tremor-rigidity-paralysis in that member, and later the same syndrome rather generalized, is not at all clear to the writer.

In assigning to trauma a place in the etiology of paralysis agitans, the following criteria should be satisfied. In infectious medicine Koch's postulates are demanded, and nothing short of their satisfaction will place a given bacteria in causal relation to a given pathological condition. In neurological medicine, likewise, associations of this sort should be more than beliefs.

These are suggested criteria:

1. The syndrome must be demonstrated.

2. The occurrence of trauma, and of sufficient trauma must be established.

3. The pathology which is the basis of the disease must be shown to be capable of resulting from the trauma received.

4. There must be demonstrated a bridge of pathology with or without symptomotology from accident to the picture presented—a time relation.

5. Other causes must be negated as having occurred in the interval between the accident and the first appearance of symptoms.

6. It must be demonstrated within reason that the syndrome was not present before the accident. The possibility of the syndrome itself causing the injury must be borne in mind. (Photographs, handwriting and the wearing out of shoes, at different periods before and after the accident, may help in placing the date of beginning of symptoms.) This criterion is a difficult one to satisfy, but it must be satisfied if a scientific proof of the causal relation of trauma to paralysis agitans is to be furnished.

"AN ESSENTIAL IN RECONSTRUCTIVE SURGERY—'ATRAUMATIC' TECHNIQUE"

By STERLING BUNNELL, M. D., San Francisco

Reconstructive surgery has been confronted by two great obstacles, infection and fibrosis. In order to overcome these, the following methods have been formulated into what I have termed "atraumatic" technique.

Through the impetus of the industrial accident compensation laws, and lately through the necessity of reconstruction of the injuries sustained during the war, many surgeons have turned their attention to this line of endeavor.

Experience teaches us that ordinary surgical procedure is not sufficient for success, and we have been brought to the realization that a new surgical technique must be developed in order to achieve results in reconstructive surgery. Unlike most surgery, which consists in opening infected areas and in removing diseased tissues, reconstructive surgery consists in building up parts, so that motion and function will result. The difference is like that between katabolism and anabolism, and the technique which has been adequate for one has proven inadequate for the other.

Returning to our obstacles, let us assume that a long and careful operation has been done. Grafts have been put in and movable parts have been rebuilt, so that they are mechanically right for function. All too probable is it that suppuration will set in, sloughing away our seeming results and making fruitless our well-meant efforts. Perhaps infection will be avoided, but in the wake of the surgeon is scar tissue. We will find that our whole operative idea becomes congealed into a hard, fibrous, immovable cicatrix functionally useless.

If we are to succeed in reconstructive surgery, we must develop super-asepsis and atraumatic technique. We cannot indulge in slips of asepsis, as in abdominal surgery, for there the ever kindly peritoneum stands ready to make amends for slight infection, nor can we indulge in the usual amount of trauma.

By super-asepsis, I mean a degree of asepsis rarely seen in the operating-rooms of today. It must be stated, however, that infection is caused by many other factors than slips in asepsis. The very same factors that cause fibrosis also cause infection. With the best asepsis, the surgical

wound is not bacteriologically clean. Trauma applied to tissues will, in a percentage of cases, furnish the necessary conditions for the few unavoidable germs present to cause infection. Aside from trauma, some other factors that determine infection are: dead spaces, tension of the sutures, large sizes of catgut, large knots, long free ends of ligature, too many stitches, too small an amount of tissue encircled by suture, excessive amount of tissue beyond ligature, mass ligation, tension in fat, foreign bodies in fat, too close proximity of skin suture line to tissue grafts, buried foreign bodies, including ligature and suture material, closure with insufficient hemostasis, excessive separation of tissue layers, drying of tissues, use of hot sponges, and the time factor in long exposure of tissues.

Assuming that asepsis has been perfected, and that the above breaks in general surgical principles have been avoided, let us now turn our attention to the factor of trauma in causing infection and fibrosis.

The trauma commonly seen in surgical operations is as follows: Tissue is torn, pinched, crushed, twisted, pulled, rubbed, scraped and picked to shreds, with a gross disregard for not only its microscopic structure, but even for its macroscopic structure, and also with a disregard to the amount of physiological tissue reaction that will result from the trauma. It is common to see an operative wound so traumatized that at the time of closure the tissue is ragged, shreddy and hemorrhagic. It is red and oozing, the anatomic parts are no longer differentiated, and the tissue has lost its consistency and is flabby and shapeless. How different in appearance such a wound is from one which has been atraumatically handled. Here we find a clean, dry wound, with pale, smooth, glistening tissues still in their natural colors and with their anatomy clearly differentiated. Its histological structure has not been damaged, and in the healing there will be but little tissue reaction.

If our conception of the tissues be a histological one, we will appreciate them as being made up of a mass of succulent cells, held to each other by a delicate mesh-work of white fibrous and elastic tissue, nerve fibrils, lymphatic and blood capillaries. Let us pull or crush this tissue to the degree of tissue strain. What happens—the cells are ruptured and their protoplasm escapes, the fibers of connective tissue and the nerve fibrils are fragmented, and the blood and lymph capillaries are ruptured. Protoplasm, lymph and blood escape into and balloon out the interstices of the tissues, and the histological structure of the tissue has been reduced to a pulp. Animal cells have the characteristic of irritability and react greatly to such trauma. This physiological reaction leads to cicatrization throughout the damaged block of tissue, and its normal consistence will never be regained.

With this microscopic conception of the tissues let us think of what can be seen daily in almost every operating-room, and acknowledge to ourselves that there is far too much trauma. The eye specialist handles the eye carefully, and the brain specialist handles the brain carefully, but the general surgeon often works away with an apparent oblivion to the fact that he is inflicting irremediable injury to the delicate live tissues in his grasp. One often forgets to gauge carefully the degree of force used in retracting or pulling tissues, and pulls even to the degree of macroscopic laceration. Gauze is harsh on tissues, and when we rub with it unlimited times in an effort to wipe up the blood, are we not unmindful that each time the tissue is sponged, trauma is inflicted? With blunt dissection, tissue is microscopically torn in a wide zone and is often picked and shredded to raggedness, even to the naked eye. Dull needles necessitate the use of an undue degree of pinching with forceps in order to hold the tissue for sewing. Dull knives and dull scissors do more damage than sharp ones, and call for more strokes. Hemostats are often used to grasp living tissues, and even skin. When we use hot sponges to stop hemorrhage, we are unmindful of the fact that tissues react to an excessive amount of heat. By poor team work, puttering and unskillful handling, the time of an operation may be so prolonged that the tissues are dried and suffer a long duration of trauma and exposure. Tremor makes trauma, and the trauma makes fibrosis. Tremor on the part of the assistant or operator, prevents accuracy and leads to a nervously moving field, loss of composure and repeated inaccurate strokes of the instrument. Last, but not least, much trauma is caused by repeated motions when one motion should accomplish the purpose. Fussy, aimless and ineffectual manipulations of the tissues result in countlessly repeated motions, and every impact means a traumatism. It is common to catch one's self groping for an idea by manipulating the tissues by letting the fingers precede the thought instead of the thought pre-planning the movements of the fingers.

Let us now consider ways and means of preventing trauma, so that infection may be lessened, so that fibrosis may be reduced to a minimum, so that the wounds will heal with the least amount of tissue reaction, and so that we will succeed in reconstructive surgery. All tissue, even if of such low dignity as skin, tendon or muscle, should be handled with as great an amount of gentleness and delicacy as practicable, even as one would handle a brain. Let the degree of force used be cultured and always below the degree that would cause microscopic tissue strain for that particular tissue. This necessitates a nice conception of the histological strength of the tissues. We should maintain a veneration for the tissues and keep our mind always on their post-operative reaction. In order to avoid the trauma of sponging a blood-pressure band should be used as a tourniquet in operations on the extremities, so as to have a bloodless field. It should be removed before closing and then after pausing long enough for clotting to occur in the small vessels, the remaining bleeders should be tied with double or triple 0 catgut. Scissors, knives and needles should not be boiled, as boiling dulls their edge. Tissue forceps should hold more by retracting than by pinching. Unless for special purpose, only pointed hemostats

should be used, so that the vessel itself will be caught, and not the surrounding tissue. Except for catching vessels hemostats should not be used to grasp tissue that is expected to live.

It is important to arrange the light to the best advantage, to make an adequate incision, so the work will not be hampered, and to make the complete length of the incision at the beginning of the operation, so as to have the maximum benefit of exposure. Time used in arranging parts for ease of work is well spent. The part operated on should be held in a plane perpendicular to the operative line of vision. Organs should be delivered, if possible, for greater ease of work.

The time of an operation should be reduced to a minimum. This can be done by developing team work, as the many tiny pauses caused by an assistant being just slightly behind, by his slow reflexes, and by the lack of anticipation, count up very appreciably. Hemorrhage causes much delay, but this can be more quickly controlled by remembering that exposure is the secret of catching a bleeding vessel. Knowledge of anatomy, the use of simple methods, and the avoidance of being dependent on assistants and the development of skill will help to shorten the time of operations.

One of the most important factors in atraumatic technique is conservation of movements. Let each movement be studied, pre-planned, purposeful, accomplishing its purpose in the single action, and not be repeated. There will then be the one impact, or traumatism, instead of many. All movements should be direct and to the point. In order to reduce the time, the excursion of the hand from one place to another should be rapid, but at the end of the motion, where the tissue is acted upon, the motion should be slower and under control. The motion should be cultured and with the maximum degree of gentleness that will accomplish the act. Thought should always precede the motion, and even go far enough ahead to anticipate the next motion. False motions are of no avail and only complicate a procedure and upset composure. Contrast the old-time pianist, who swayed his head and body and let his hands fly high in the air, with one of modern teaching, who sits balanced erect and stationary, and concentrates his whole attention on his only moving parts—his fingers. Watch a skillful mechanic at his work. He wastes no motions, and each one accomplishes what it attempts. How far behind the mechanics we surgeons are in this aspect of our work. In factories efficiency experts, in order to demonstrate the value of trained movements, have attached electric lights to the hands of an unskilled workman while he did his particular job, such as folding handkerchiefs. A moving picture was then taken and a manikin of wire was constructed, showing the actual excursion of the lights. After training the man to do the same job with the fewest and most direct motions, a similar manikin was made for comparison. Its simplicity and shortness of wire compared with the first manikin was, of course, a contrast, and the man could then turn out much more work in the same length of time and with greater ease. In order for us to master conservation of movements in operating, we should practice it in everything we do in daily life, such as dressing and undressing, or working with our car. Why should we cultivate conservation of movement? It diminishes trauma, it reduces the time of operation, and this reduces the duration of tissue abuse. It allows one to complete more difficult and extensive operations than we otherwise could. It develops skill. The habit formed allows the mind to think on the more important aspects of the operation. It makes for composure; it allows slower and more accurate movements.

If each movement accomplishes something, and the movements follow each other in rapid succession, our operation will be finished in a very short time.

Another very important factor in atraumatic technique is to maintain a stationary field. This means the control of tremor, both on the part of the operator and the assistant. Some assistants are very nervous and impart a nervous tremor, choreaform in nature, to the field. When they move one hand they must move the other, or even their head and feet. They fairly gesticulate with the operative field. This uncertain jogging, or vibrating of the field, makes it impossible to do accurate work. One never knows where the knife edge, hemostat or needle will meet the tissue. If the amplitude of the vibration be three mm, how impossible it is to be accurate within one mm. The miss of the instrument is equal to the amplitude of the jog. He is trying to do the impossible. Uncertainty is brought in. His composure is upset, and soon all in the room become irritated. Usually, the operator is not aware that it is the moving field that is causing the trouble. When two objects are moving, accurate connections cannot be made. Let a person attempt free-handedly to pass thread through the eye of a needle that another person holds also free-handedly. Their combined tremors make it impossible. In operating, if one is moving, the other should remain motionless. To test one's tremor, hold free-armed before one a pin in each hand, so that the points remain one mm apart and the two pins form a straight line. To record a tremor, let one with a braced ruler slowly rule a line across a piece of cardboard held free-handedly by the person to be tested. The deviation of the line from a straight line will give a record of the tremor. Tremor and a moving field account for many an inaccurate and repeated motion in surgery, thus adding materially to the trauma. Tremor may be controlled by bracing, relaxation and poise.

In order to see how the jeweler does his fine work I went through one of their manufacturing houses, and what I saw can be applied to surgery. The jeweler sits balanced on a stool. He wraps his legs about the stool. With this foundation he braces his elbows against his body, or his bench, and rests his forearms on two rollers which project five inches from the edge of the bench. There is out-jutting from the edge of the bench a piece of wood on which his hands are braced. The piece of jewelry is steadied in a notch in the wood. He eliminates tremor by this elaborate system of bracing. He magnifies his

accuracy through lever action. Using his braced fingers as the fulcrum, the point of his instrument can be very accurately controlled by concentrating on the movement of the end of the long lever arm, his elbow or shoulder. Similarly the artist uses his mall stick. With these principles, the surgeon in using such as scissors or hemostat may brace, with an extended finger, with his forearm, with his other hand, and etc.

The basic thing in the art of movements of skill is relaxation. The whole body is put in relaxation, and the only part that moves is that part required to execute the movement. In addition to relaxation the whole body is also put in poise. This is balance. Motion with the hands loses its refinement if the back is off balance, with the consequent strain on the back muscles subconsciously diverting our attention or effort. With the body in relaxation and poise, our attention to it is then relieved, and 100 per cent of our attention or effort can be concentrated on the movement of the hand. If now we brace down on some of the fingers our whole amount of effort and attention is concentrated to just that part which is distal to the last brace. In this way we can use the maximum amount of refinement in the motion, and the tremor can be avoided.

If a Wolfe graft is not handled atraumatically, that part of it which has been abused, turns black with necrosis towards the end of the first week. If the delicate membrane (epitenon) about a tendon becomes scratched, an adhesion between the tendon and its sheath forms at this point, preventing function. If nerve suture is not done atraumatically, fibrous tissue will form between the two ends and around the junction tightly encircling it and preventing regeneration. If trauma is used where grafts are placed, serum forms about the grafts. This becomes infected and the grafts slough out. If infection does not occur, the tissue reaction replaces much of the graft with scar tissue and binds it tightly. Many more disasters due to trauma can be cited, but suffice it to again state that unless we use an atraumatic technique, the higher surgery of reconstruction cannot be accomplished. If mastered, it will greatly facilitate the simpler forms of surgery and give not only an easier convalescence, but very little local reaction. The reduction in the amount of local reaction is surprising.

Atraumatic technique not only does much of what is claimed in anoci association, but has the advantage of insuring an approximation to reactionless healing and in reducing infection. We refer to the art of surgery, so why not make it an art, and, like the artist, be engrossed in its handicraft?

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ACUTE BRAIN INJURIES

By THOS. O. BURGER, M. D., F. A. C. S., San Diego

Injuries of the head do not decrease perceptibly in spite of the "safety first" propaganda. There has also been an alarmingly high death rate until the past few years, but improved diagnostic methods, better judgment as to what cases are operatable, and still better technique have reduced the mortality from 53 per cent to 15 per cent or 28 per cent, depending on clinics.

The *acute abdomen* is probably considered the field of medicine where most skill, the application of more auxiliary methods in diagnosis, the most needed place for the use of surgical judgment, and often the occasion where real courage in certain forms of treatment is demanded. I feel that the *acute head injury* is a close competitor to the *acute abdomen,* if it does not surpass it, in its need of all the essentials mentioned for the former, to make life-saving and the future normality of the patient.

The reason for the high mortality and poor functional results have been, that many cases were operated unnecessarily, others have been operated at the wrong time, and there have been failures to operate still others that could have been saved by surgery.

Therefore, the three factors that are responsible for the great reduction of mortality and the giving of more nearly normal patients following these injuries, are as follows:

1. Determination of whether the patient should be operated or treated expectantly.
2. If there is surgical intervention—the selection of the proper time.
3. The type and technique of the procedure.

We know that a large group of these injuries recover under proper medical observation and treatment. Also a smaller group will die whether operated on or not. A third moderately large group will be saved by operating on them at the proper time and manner, or lost by letting that opportunity pass, or else having a recovery with a patient who has headaches, mental and emotional disturbances or psyco-neurosis.

Therefore, it is seen that it is in this latter group where preventing deaths and securing future normality is to be obtained.

These cases are the ones that demand the most skill and closest observation by the doctor as well as an intelligent nurse to determine the condition or stage of the patient. I will enumerate the symptoms and signs of "Acute Brain Injury," emphasizing and dwelling on those of proven value. Those to watch—and it is best to instruct the nurse as to their meaning and value—are:

1. General symptoms: Headache, nausea and vomiting.
2. Local signs: Ecchymosis, bleeding from eyes, nose, throat and ears.
3. Local signs: Shock, temperature, pulse rate, and quality, respiration, blood pressure, paralysis, impaired sensations, unconsciousness, restlessness, convulsions, reflexes, pupilary changes and urinalysis.

Special study of the following will be dwelt on, viz.: First, X-ray findings of the bony injury of the skull. No doubt much unnecessary surgery and vice versa, the failure to operate is due to the X-ray report. Many cases are frantically rushed to the operating-room for trephine because of a report of vault fracture, without regard to the question of shock or whether the important member, the brain itself, is being damaged. The skull is not the object here, but the

result of the fracture on the brain as regards direct trauma or its effect on intracranial pressure. The X-ray of the skull is of value, but is secondary to the structure it houses.

The second of the special studies of signs is a competent ophthalmoscopic report of the fundus. Beginning papiladema, if studied carefully and frequently, is a very accurate estimation of the beginning and increasing intracranial pressure and should never be omitted in studying these cases.

The third, and probably most important of all findings, is the spinal puncture which may be of value in discovering blood in the cerebro-spinal fluid, and the pathologist may make other tests, such as cell counts, etc., that are of determining value. The one most crucial test is the estimation of the increased intracranial pressure. This may be estimated by the rapidity with which the fluid spurts out, but is best and most accurately measured by the spinal mercurial manometer. (Instrument exhibited.) It has been found that an adult patient, reclining, has a normal pressure of from 5 to 9 m.m. of mercury, and pressure above that means increase of the intracranial pressure, especially if it shows 12 m.m., or more.

While considering spinal puncture, it is well to add that there is a real danger of compression of the medulla in the foramen, although it is only in a very small per cent and usually in those with very high pressure, and particularly in the cases with subtentorial pressure. There have been a number of necropsies showing a "collar" of the medulla from this source. This should always be thought of, and if there is a high pressure the tube may be compressed and the fluid allowed to flow out very gradually, and in that way the danger is avoided.

The neurologist should always be an important member of frequent consultations in these cases, especially the ones in the questionable class.

The increase in our knowledge in the past few years of what goes on in the brain has much improved our results in treatment, and a few words as to the increase of intracranial pressure is permissible. We know that many cases of head injury without bone fracture are as serious as if a fracture existed, as when due to concussion or a hemorrhage which may occur either epi- or subdurally and cause serious conditions. There may be no demonstrable damage to any structure, and yet a wet brain with its increase of pressure may cause death by medullary compression and edema. Or, we may have prolonged increased pressure that so damages the brain tissue that connective tissue is developed and the patient is the typical post-traumatic psyco-neurotic, with the headaches and emotional and mental symptoms that are so frightful. Many of these may be saved, and death prevented by proper treatment at the proper time. We must also keep in mind the fact that some of the supposedly slight concussions may develop any or all of the above conditions, just as some apparently very serious cases may clear up rapidly and permanently.

TREATMENT

First remember that about 60 per cent of serious head injuries have shock, also that about 10 per cent of them will die in shock, so that proper early treatment of the patient may do much in lowering mortality.

Quiet and *heat* are our best remedies—which means that if the patient can be put easily in a warm place and not molested, he is better off than if he is madly rushed to the hospital without consideration of his bodily temperature, shaking up and, etc. Stimulants, camphor in oil, etc., may be used, and morphine is often excellent as in any kind of shock and is not contra-indicated as was once thought. Hot coffee per rectum is also good, but do not over-stimulate as the patient comes out of shock for fear of increasing an intracranial hemorrhage.

Later we may use catharsis and an ice cap with absolute quiet. Some think that atropine in large doses prevents pulmonary edema, and sedatives for restlessness are, of course, desirable.

Aseptic care of any wounds is imperative, though sterile gauze over the ears is often less mischievous than efforts at cleansing the canal when cerebrospinal fluid has shown that an injury there connects with the cranial cavity.

Lumbar puncture has a place in reducing pressure of the brain, and may be repeated a reasonable number of times.

A trephine to elevate or remove a depressed vault fracture may be demanded, but should often be secondary to a subtemporal decompression, especially if the fracture is over an important area of the brain and if there is, or is likely to be, increased intracranial tension. Rapid herniation of brain substances may mean disaster, and later herniation with the horrible fungus growth is a calamity the surgeon wants to avoid.

Subtemporal decompression is the greatest boon to this class of cases, and has become in the past few years so perfected and standardized that it is safe and of inestimable worth. Some of its advantages I will quote from "Sharpe's Brain Injuries."

1. "It exposes as widely as necessary, a comparatively 'silent' area of the brain, the temporosphenoidal lobe and, therefore, any operative damage to the exposed cortex will not appear clinically; also, in patients having a high intracranial pressure the danger of a hernial protrusion of a highly-developed area of the brain with resulting paralysis, etc., cannot occur.

2. "Being situated midway between the frontal and occipital lobes, it permits the careful exploration of all parts of the ipsolateral hemisphere and ventricular puncture, as well as permanent drainage, is also possible.

3. "It exposes the area of the middle meningeal artery, so frequently injured in the traumatic cases, and also affords excellent drainage to the middle cranial fossa at its lowest point—a very important factor in the treatment of brain injuries.

4. "A firm closure of the decompression opening is obtained by means of the strong temporal muscle and its overlying fascia with its strong attachment to the parietal crest intact—a most important requisite in patients having a high intracranial pressure. Hernial protrusions with their frightful fungi are most rare.

5. "Technically, the operation is less difficult than other cranial operations in that the skull opening is made through the thinnest area of the vault—the squamous portion of the temporal bone.

6. "The vertical incision is preferable to the former curved one in that it renders more possible a careful hemostasis of the scalp by means of the method of bi-manual pressure-traction and the clamping of the main branch of the temporal artery at the very beginning of the operation, whereas the curved incision passes through the various branches of the vessel in the scalp, and they must be clamped individually. Again, the vertical incision not only permits drainage at the lowest point of the skull, but it makes possible a large subtemporal bony opening without risk of loosening the attachment of the temporal muscle and fascia to the parietal crest, insuring a firm closure with no danger of cerebral hernia.

7. "The great frequency of temporo-sphenoidal lesions such as tumors, abscesses, and brain injuries make this routine exposure of the subtemporal decompression a most important aid in the treatment of underlying intracranial lesions."

SOME PRACTICAL POINTS IN RESUME

In the past, and even now, in many places, a suspected head injury is treated only from the standpoint of skull fracture. If an injury to the bony vault is demonstrable, surgery is at once resorted to, whereas if no fracture is found, or if there is a basal fracture, the case is often hopelessly abandoned.

In these injuries about 60 per cent are in shock, and about 10 per cent will die while in shock.

Study of the eye grounds and spinal puncture, with determination of the increased intracranial pressure, are the two crucial tests in determining the condition of patient.

Kocher, many years ago, made observations and recognized four stages from treatment standpoints.

First stage of compression—Medical expectant treatment.

Second stage of compression—Ideal operative stage.

Third stage of compression—Imperative operative stage of medullary compression.

Fourth stage of compression—Non-operative or hopeless stage of medullary edema.

It is imperative not to operate in shock or in the late stage of medullary edema.

Vault fractures often are best done secondary to a subtemporal decompression.

Increased intracranial pressure is the principal criterion as to the necessity for surgery.

Subtemporal decompression should be more frequently done.

Read March 8, 1921.

THE NEUROLOGICAL ASPECTS OF VISCEROPTOSIS.*

By THOMAS G. INMAN, M. D., San Francisco.

Visceroptosis, not infrequently discovered accidentally in the course of the routine examination, may be present in a marked degree without, apparently, causing a single subjective symptom. Attention is attracted to the alimentary canal because of the presence of other local conditions such as constipation, indigestion, meteorism or mucous colitis and it has been customary to associate with the visceral ptosis certain distant symptoms, referable especially to the nervous system. Of these, weakness, nervousness, vertigo, syncope and insomnia are said to be the most frequent. It is extremely doubtful, however, if any one of these symptoms may truthfully be said to be due to the ptosis alone. Undoubtfully the whole question has been somewhat clouded by a lack of appreciation of the fact that the individual of the so-called enteroptotic habitus and the otherwise normal individual with more or less visceral ptosis belong in two widely separated groups. In the former or congenital type there is especially noted the long, narrow thorax, the small, central heart, small lungs, pouching of the lower abdomen and faulty station. The respiratory excursion is shallow and costal in type and sudden calls for exertion are attended by an abnormal increase in the pulse rate. Yet, these individuals, in the absence of the interpolation of local or general disease, may go through life without suffering in the least from any symptom referable to their physical defect other than a somewhat limited supply of reserve energy. They early learn to adapt themselves to their capabilities and thus escape that extreme exhaustion which is often the starting point of the train of symptoms which makes these cases familiar to us all.

Individuals in the other group, in which visceral ptosis is to a greater or less extent acquired, always present concomitant disease. These are the cases with relaxation of the abdominal walls, lacerated perinei, lowered position of the hollow viscera as a result of adhesions following inflammatory conditions of the lower abdomen and diminution of visceral and somatic muscle tone following local or general diseases of a toxic nature. It is in this type that recognition of the true clinical picture is attended with difficulty and the real condition is often overlooked because the attention is directed to the accompanying pathology. Too, these patients, habituated to other conditions of health, cannot accept their disability as the natural consequence of an inherent physical trait and there arise abnormal mental attitudes which add to the difficulties of diagnosis and treatment.

Some twelve years ago my attention was drawn to this subject following the description in the literature of a number of operations for the relief of ptosis and excessive mobility of one or another of the abdominal organs. Experience showed that the mere elevation and fixation of a viscus seldom relieved the patient of the symptoms which led to the performance of the operation. Some investigations were undertaken at that time in collaboration with the late Dr. Fayette Watt Birtch to determine if other factors were not essential to the syndrome credited to visceroptosis. The results were collected and published in 1912 under the title, "Blood Pressure Observations on Patients with Relaxed Abdominal Musculature." [1] The conclusions arrived at were briefly as follows:

* Read before the San Francisco County Medical Society, April 12, 1921.

[1] The Journal of the American Medical Association, January 27, 1912; vol. 58, pages 265-268.

1. Uncomplicated visceroptosis causes no symptoms.

2. Nervous symptoms such as weakness, dizziness and fainting are the result of cerebral anemia brought about chiefly by interference with venous return from the abdomen and lower extremities, a condition depending, in part at least, upon a disturbance in the normal reciprocal action of the diaphragm and abdominal muscles.

3. Observations of the blood pressure in cases without symptoms may show an abnormal drop in the systolic reading on standing after lying.

4. In cases with cerebral symptoms there will be found a fall in the diastolic as well as the systolic pressure on standing after lying.

Among medical men it is generally believed that these patients rather tend toward the neurotic type and that nervous symptoms are frequent accompaniments of the disorder. In my own mind the impression has grown that there was an enteroptotic syndrome. It seemed that there were frequent complaints of inability to stand well; that in the inactive vertical position there was likely to be an intrusion of subjective sensations of weakness, dizziness and faintness. Many of these patients state that they cannot watch parades, visit exhibitions or stand while having a dress fitted without being threatened with a fainting spell. A reference to the recorded complaints in large groups of cases, however, does not aid materially in the building up of a constant syndrome.

Certain complaints referable to the nervous system recur frequently in the histories of all chronic cases regardless of whether the nervous system is or is not affected to an extent recognizable by ordinary methods of examination. Thus in one thousand cases examined by the Diagnostic Group at St. Luke's Hospital of four frequently occurring complaints nervousness was given in 51 per cent, depression in 20 per cent, weakness in 17 per cent and sleeplessness in 7 per cent of all cases. In the same group a diagnosis of visceroptosis was made 151 times, in forty-two cases this was the primary diagnosis and together with closely associated conditions was assumed to explain the major complaint. Of the forty-two cases the primary complaint was directed to the stomach in 48 per cent, to the intestines in 31 per cent, to nervousness in 12 per cent, to weakness in 12 per cent, to fainting 4.5 per cent and to dizziness 2.5 per cent. In the secondary complaints nervousness occurred in 80 per cent, weakness in 38 per cent, depression in 31 per cent, sleeplessness in 26 per cent. Comparing these figures dirctly for four complaints will show some variation though perhaps an immaterial one.

For example: Nervousness was recorded in 80 per cent of the Ptosis cases and in 51 per cent of all cases. Weakness, 20 per cent of the Ptosis cases, 17 per cent of all cases. Depression, 45 per cent of the Ptosis cases, 20 per cent of all cases. Sleeplessness, 8 per cent of the Ptosis cases, 7 per cent of all cases.

Fainting was recorded eleven times in the 151 patients. There were thirty-four females in the forty-two cases and eight males, the youngest was twenty-two years of age and the oldest sixty-nine; average age, forty years four months.

In a condition where disturbances in the circulation are charged with bearing some of the burden of the symptomatology, it would seem that there might be something of interest in an examination of the blood pressure determinations. In forty-two cases the lowest pressure was 90/40 and the highest 178/86. The average systolic was 113, the average diastolic 72.4. Certainly, in the type of case here presented with an average age of forty years and with arterio-sclerosis occurring as a secondary diagnosis thirteen times these pressures are notably low.

Support of the statement that the visceroptotic seldom seeks medical relief until some other pathological condition becomes an added factor will be seen by refernce to the diagnoses. Of the forty-two cases in which ptosis was the primary diagnosis and was believed to best explain the maior complaint, in only two cases was the visceroptosis the only reported finding. But there were an additional seven cases in which there were no other findings referable to the alimentary canal. Associated conditions directly affecting the digestive apparatus occurred as follows—mucus colitis in 40 per cent, spastic colon in 36 per cent, constipation in 36 per cent and hemorrhoids in 12 per cent. Sources of focal infection occur frequently. Thus the teeth were involved in 45 per cent, the tonsils in 38 per cent and the prostate in two cases. Other diagnoses included pulmonary tuberculosis seven times, arterio-sclerosis thirteen times, arthritis seven times, lacerated perineum seven times. Toxic cardiopathy, neurasthenic state, vasomotor instability and poly-glandular dystrophy were disagnosed each three times.

With several of these pathological conditions existing in the same individual it may appear as if assuming too much to place the burden of the major diagnosis upon visceroptosis, but this has always been done with due respect to the mildness of the associated conditions, to the grouping of the symptoms about the gastro-intestinal tract and an accompanying lack of abdominal muscle support to the splanchnic circulation.

It is undoubtedly true that nervous symptoms frequently depend upon the type of individual concerned and that somatic pathology produces reactions in the psychic sphere in accordance with the already existing mental content. The constant inflowing of abnormal sensory impressions from the great gastro-intestinal field, the subiective sensations of weakness and depression, due on the one hand, to faulty nutrition and on the other hand to an inadequate blood supply to the brain, may be said to account in large part for the mental symptoms so frequently complained of by these patients and which causes them so often to be classed with the neurasthenics. But in the proper interpretation of the whole clinical picture the neurological aspect cannot be separated either in diagnosis or in treatment and for complete results in therapy care of the nervous symptoms must go hand in hand with the treatment of the somatic pathology.

1168 Flood Building.

Book Reviews

The Roentgen Diagnosis of Diseases of the Alimentary Canal. By Russell D. Carman, M. D., head of Section of Roentgenology in the Division of Medicine, Mayo Clinic, and Professor of Roentgenology (Mayo Foundation), Graduate School of Medicine, University of Minnesota. Second edition thoroughly revised. Octavo of 676 pages with 626 original illustrations. Philadelphia and London: W. B. Saunders Company, 1920. Cloth, $8.50 net.

This book is a complete and exhaustive study of gastro-intestinal diseases from the viewpoint of the roentgenologist.

Not only are the various diseases treated in full, but a great deal of attention is paid to the variation in the position, size, and shape of normal stomachs. It contains all the good features of the first edition and, in addition, has been brought strictly up to date. There is an addition of two new chapters, one on hour-glass stomachs, in which a careful differentiation is made between spasmodic and organic hour-glass stomachs, and the second on pneumoperitoneal diagnosis of the abdominal region. In this latter chapter, the author has carefully pointed out the dangers and contra-indications, and sounds a note of warning that it should be used only as a last resort.

The author, perhaps, has a better opportunity of checking his roentgen diagnosis in the operating-room and at post mortem than most roentgen-ray workers. He is frank in calling attention to his mistakes as well as mentioning his confirmed diagnosis.

Certainly, no one should attempt to make roentgen diagnoses of gastro-intestinal lesions without the aid of this very excellent book.

L. B.

A Text-book of the Practice of Medicine, by James M. Anders, M. D., Ph. D., LL. D., Professor of Medicine, Graduate School of Medicine, University of Pennsylvania, Fourteenth Edition. Thoroughly Revised with the Assistance of John H. Musser, Jr., M. D., Associate in Medicine, University of Pennsylvania. Octavo of 1284 pages, fully illustrated. Philadelphia and London: W. B. Saunders Company. 1920, Cloth, $10 net.

The steady progress of its editions indicates the deserved popularity of this text-book. Such books, even with the skilled condensation of the present volume, must increase in bulk, so wide is their range. Here the compression is judiciously done, the student will find all essentials of practice, and the index is good.

Much recent work is reviewed, and due importance given to new work and its bearing on scientific medicine; sections on treatment are brought up to date and adjusted to present knowledge. Room has been made for a fuller discussion of diseases such as typhus, cerebrospinal meningitis, etc., that have acquired more importance during the world war, and there is a careful appreciation of the relation of asthma, etc., to foreign protein. Other sections have been rewritten, and there are new articles on botulism, streptococcic (hemolytic) pneumonia, trench nephritis, wood alcohol poisoning, etc., etc. It will be seen, therefore, that the work is maintaining its well-known standards, and that it offers to the student and practitioner a very complete resumé of our present knowledge of medicine.

H. A.

Psycho-Pathology, by E. J. Kempf, M. D., St. Louis: C. V. Mosby Company, pp. 762, 87 illustrations. 1920.

"Ceci est un livre de haulte digestion, pour l'esbattment des Pantagruelistes et non autres."

The unrest and the rebellion of the times show themselves in divers ways. As there are Bolshevists in Politics, Vers librists in Poetry, and Tactilists in Art, so there are Freudians and Ultra-Freudians in Psychiatry. The curious amateur is captured by the apparent simplicity of the fundamental idea. All one has to do is to refer all the psychoses and neuroses to a sexual basis. It's as easy as vers libres or a cubistic bust.

But in spite of this apparent simplicity, there seems to be great difficulty in making one's self clear. The reader plows through pages and pages, emerging finally so obfuscated that he wonders if he is afoot or a-horseback. Ideas there are in plenty, and some of them good ones. One cannot but admire the time and labor that has been spent on the work and the keenness with which certain traits in the individual or points in the history have been seized upon, but the jumbled-upness and the truly Teutonic muddiness of expression leave one bewildered at the end.

There are some remarkable interpretations of ancient and modern works of art. In Boeklin's Todesinsel, for example, the masses of rock on either side the cove symbolize the thighs, the cypresses, the pubic hair, and the gateway the vaginal opening. There is also the striking discovery that Darwin's lifelong ill health was traceable to masturbation, probably aggravated by that five-year voyage in the Beagle. Even to one long-used to Freudian Deutungen, there is a kick coming in the pages of Kempf.

E. W. T.

The Anatomy of the Nervous System, from the standpoint of development and function. By Stephen W. Ranson, M. D., Ph. D., Professor of Anatomy in Northwestern University Medical School, Chicago. Octavo volume of 395 pages with 260 illustrations, some of them in colors. Philadelphia and London: W. B. Saunders Company, 1920. Cloth, $6.50 net.

This is a text-book presenting the anatomy of the nervous system from the developmental and functional point of view. Students find a study of structural details by themselves difficult; but when considered in connection with physiology they become interesting. The subject matter is well arranged for the medical student. Difficult conceptions are made clearer by numerous diagrams.

The conduction pathways, so difficult for students to visualize, are shown in numerous drawings. The illustrations are well made and carefully labeled. In fact, every device is employed, which will give the student a mental picture of the subject. A carefully selected bibliography adds much to the value of this work as a text-book.

The author presents his evidence in favor of the unmyelinated fibers of the spinal nerves and dorsal roots as the pain fibers. This is a new conception of the mechanism of pain conduction. The sympathetic system is treated in conformity with the newer ideas based upon its relations to the cerebrospinal system, particularly the vagus nerve. The autonomic nervous system as a functional division of the nervous system is treated in detail, and its important conduction paths outlined. An innovation in a work of this nature is a consideration of important reflex mechanisms, as, for example, in respiration and coughing and vomiting; these reflex arcs are well diagramed.

The book, on the whole, is an up-to-date exposition of a very difficult subject in medicine, and it should facilitate for students visualized anatomy.

Correspondence

THE AIRPLANE WAITS

April 9, 1921.

Dr. Harlan Shoemaker, Sec.-Treas.,
Los Angeles County Medical Association,
Marsh-Strong Building,
Los Angeles, California.

Dear Sir:

Pursuant to our telephone conversation, I am writing you the arrangement I made with Henry Fisher, Jr., of the Mercury Aviation Co., Crescent and Wilshire blvds., telephone 567363.

That their five-passenger, all-metal monoplane, with two pilots, make the following schedule, daily, May 10, 11 and 12, 1921:

Lv. L. Angeles 7:00 a. m. Ar. S. Diego 8:30 a. m.
Lv. L. Angeles 12:00 a. m. Ar. S. Diego 1:30 p. m.
Lv. S. Diego 9:30 a. m. Ar. L. Angeles 11:00 a. m.
Lv. S. Diego 4:30 p. m. Ar. L. Angeles 6:00 p. m.

The fare one way will be $20, round trip $35. The plane leaves Mercury Field, Crescent and Wilshire blvds., Los Angeles, and arrives at North Island, San Diego, the Government permitting us to land on its field, which is close to the Coronado Hotel.

I have been riding in this plane considerably the last six months and know that it is not only a first-class ship, but also that it is well handled, absolutely no stunts are allowed. I feel that the words, "Medical Society," should be painted on the lower side of the wings as large as the space will permit.

Seats not taken by the doctors after May 8 will be offered to the public; naturally the doctors will not wish to return the first day, nor leave on the last day.

The little flying I have done has made me an enthusiast on civil or commercial flying; also brought me to the realization that we in Los Angeles who, because of our climate, should lead the world, are way behind the Europeans, where they have already aeroplane strap-hangers. If you will refer the doctors to me I will be glad to explain anything I can, also receive their reservations for the proposed trips. I am satisfied it is safer than by auto and more comfortable.

Yours by way of the air,

P. C. H. PAHL, M. D.

County Societies

ALAMEDA COUNTY

The regular meeting of the Alameda County Medical Association was held at the Alameda County Health Center on the evening of March 21. Dr. Frank Baxter arranged a very interesting program upon subjects relative to the eye, and lead the discussion of the following papers: "The Relation of the Eye to General Practice," presented by Dr. R. J. Nutting; "A Case Report of Detached Retina," read by Dr. J. W. Calkins, and "The Treatment of Cataract by Radium," read by Dr. Wm. H. Sargent.

On April 12 the Alameda County Medical Association will entertain at luncheon at Hotel Oakland as their guest of honor, General John M. T. Finney, Clinical Professor of Medicine of John Hopkins University, and Chief Surgical Officer of the A. E. F. in France during the war. This promises to be a very interesting meeting, and more than usual interest is manifest by the fact that already one hundred and fifteen favorable answers have been received to the invitations.

Dr. John L. Lapp, LL. D., managing editor of Modern Medicine, is to speak upon "Industrial Medicine," following a dinner at Hotel Oakland on the evening of April 14, given by the Alameda County Health Center.

The March meeting of the staff of Merritt Hospital occurred on the evening of Monday the 7th. Dr. James Adams, late of the Boston Psychopathic Hospital, spoke upon "Differential Diagnosis in Psychiatry. Dr. Stewart Irwin spoke on "Disease of the Thyroid Gland." The meeting was followed by a very enjoyable buffet luncheon.

The annual staff banquet of Merritt Hospital was held at Hotel Oakland on the evening of March 24. Dr. H. N. Rowell presided as toastmaster, and introduced the following speakers: John S. Chambers, chairman of the State Board of Control; Joseph H. King, president of the Oakland Chamber of Commerce, and Fred Emerson Brooks, the California poet. A most enjoyable musical program was furnished by some members of the Bohemian Club.

On April 2, Dr. R. T. Legge responded to an invitation from the Southern California Medical Society to speak at their meeting in Santa Ana, upon the subject of "Socialized Medicine and Its Relation to the General Practitioner.

FRESNO COUNTY

The regular meeting of the Fresno County Medical Society was held Tuesday evening at Hanford, as guests of Dr. C. T. Rosson, who entertained the society at a banquet at the Kings Hotel. The speaker of the evening was Dr. W. J. Stone, who spoke on the cause of death in pneumonia, with remarks on treatment.

CONTRA COSTA COUNTY

The meeting was called to order by Vice-President M. L. Fernandez at Richmond, Calif.

The minutes of the previous meeting were read and approved.

The resignation of Dr. O'Malley as president of the society was read and accepted by unanimous vote.

Applications for membership were received from Dr. W. S. George, of Antioch, and Dr. J. B. Blackshaw, of Pittsburg.

Owing to the resignation of Dr. O'Malley as president, Dr. Fernandez' name was proposed, and it was moved and seconded that the secretary cast the ballot.

The names of Doctors Peters, Coats, Finney and McKenzie were presented, who were unanimously elected to membership.

Clinical cases of trichiniasis were reported by Dr. Fernandez and Dr. Wetmore.

The paper of the evening was read by Dr. J. Marion Read, of San Francisco, on "Fundamentals of Clinical Calorimetry with Illustrations of Its Application." The author gave briefly the history of calorimetry, explained graphically the principals of the instrument used, and then showed the value of its use in differential diagnosis and in determining the progress of cases under treatment for hyperthyroidism.

LOS ANGELES COUNTY

The society has leased quarters in the Union League Club for the ensuing year, and the regular scientific meetings will be held there.

Dr. Edwin O. Jordan, of the Department of Hygiene and Bacteriology of the University of Chicago, addressed the society, his subject being, "Observations on the Epidemiology of Influenza." This was followed by an exhibition of diagnostic moving pictures, prepared under direction of Surgeon-General Merritt W. Ireland.

Dr. A. B. Cecil reviewed a series of one hundred consecutive perineal prostectomies, and in connection with this, favored the society with a preview of what is perhaps the most perfect cinema production of an operative procedure ever made. It is to be regretted that the length of

this report, and the time necessary for production of the moving pictures, prevent its presentation before the State Medical Society. An additional section of the society, to be known as the Trudeau Tuberculosis Section, has been admitted to membership. The officers for the ensuing year are Dr. Charles C. Browning, chairman; Dr. Leon Schulman, vice-chairman; Dr. William C. Finch, secretary-treasurer.

The uneasy head which wears the crown of Surgeon of the Receiving Hospital has again been laid low. Dr. Stadfield, who has merited much praise during the past three years for his capable service and devotion to duty, was relieved of his position by the City Council, and Dr. Goodrich, who has been serving as an assistant surgeon, was appointed chief of the service. It is understood that the latter appointment is a temporary one, and that a movement is on foot to place the Receiving Hospital under the charge and supervision of the City Health Commission. A solution of the problem in this way seems logical, and would probably result in much benefit to the community and satisfaction to the medical profession.

Marking the culmination of five years' devoted service on the part of its President, Maud Wilde, the Association of Mothers' Educational Centers held its annual Baby Week Program on March 28 to April 1. During the past year, twelve thousand mothers and their children have availed themselves of the free service so willingly extended by these centers. Dr. Wilde has been chiefly instrumental in establishing twenty-four branches in Southern California, and the benefits to be derived by the future generation are incalculable. This work has the unqualified support of the medical profession.

MENDOCINO COUNTY

A regular meeting was held at Fort Bragg on April 8, 1921. Present: Dr. H. H. Wolfe, president, and Drs. Royal Scudder, Raymond Babcock, Harper Peddicord, C. L. Sweet, P. J. Bowman, and O. H. Beckman, members.

Minutes of the yearly meeting were read and approved, as were also those of the special held at Fort Bragg on March 26.

The special was called to act upon several communications from the State Secretary's office, and which could not wait. At that special a resolution was passed that, if approved by the State Secretary, Drs. Paul J. Bowman and Royal Scudder would be declared members on payment of their dues.

A motion by Dr. H. Peddicord, and seconded by Dr. F. McL. Campbell, that a committee be appointed to take up with the supervisors about the care of tuberculosis in this county, carried.

Program—Dr. Bowman reported an interesting case of hydrocephalocele, at birth. Parturition occurred on February 6, 1921. Breech presenting. Delivery difficult; child otherwise normal. Tumor was connected by a fibrous peduncle of 3½ c. m., just below the external occipital protuberance. On February 11, it was tapped and 650 c. c. of a sero-sanguinous fluid let out. On February 28, the child being otherwise normal, the tumor was again tapped and yielded 450 c. c. of fluid similar to first tapping; then it was amputated near its base.

Its wall consisted of skin, fascia and pia, but no dura-mater. From a 2 c. m. opening in the skull, a typical embryonic brain tissue, the size of a hen's egg, was protruding. After amputating this mass, the child's condition became grave. It never rallied, and died one hour after operation.

Dr. Babcock exhibited X-ray burns of both hands, and gave a very interesting talk on the subject.

Dr. Scudder reported a case of paralysis of the lower extremities following childbirth. The doctor gave a very interesting description and talk on it.

The next meeting will be held at Ukiah in June.

SAN DIEGO COUNTY

Everything is set for the best State medical meeting California has ever held. Let the Golden Poppy Jubilee be something to be remembered by all. The local committee of arrangements consisting of L. C. Kinney, M D., chairman, P. M. Carrington, M. D., and Paul Wegeforth, M. D., ably assisted by a corps of lieutenants, have planned and worked unceasingly through the past few months to make this event a social as well as a scientific success.

The San Diego County Hospital, accredited as a standardized hospital by the American College of Surgeons, extends an invitation to visiting doctors to inspect its equipment and workings. This included the Vauclain Hospital for the tuberculous in the immediate vicinity of the general hospital.

A well-managed training school for nurses is conducted in connection with the hospital. Applications for the nursing course should be made to Mrs. L. E. Jackson, superintendent of nurses.

A new horizontal fluoroscopic table was recently purchased for the X-ray department.

About fifteen members of the county society motored to Santa Ana to attend the Southern California Society meeting, April 1 and 2. They were awarded by a program of unusual excellence and breath of interest.

St. Joseph's Hospital is steadily advancing in its standardization program, the staff having established monthly meetings for routine business and the discussion of interesting cases occurring in the wards. Dr. O'Neill, as head of the executive council of the medical staff, makes a capable and energetic officer.

Recent meetings of the society have furnished some excellent discussions of papers well meriting the same by their able presentations. We mention the following as being particularly practical: Dr. J. F. Churchill's paper of March 22, on "Angina Pectoris and Pulmonary Edema"; and Dr. C. M. Fox, on the same date, on the "Treatment of Lung Abscess"; Dr. T. F. Weir, on April 12, "Induction of Labor at Term," and Dr. V. G. Clark, on the same date, "Post Operative Abdominal Pain." The system of printing a synopsis of the papers in advance of the meeting is proving distinctly stimulating to the discussion.

SAN FRANCISCO COUNTY

During the month of March, 1921, the following meetings were held:

Tuesday, March 8, 1921—General Meeting.

1. Smallpox situation. Wm. C. Hassler.
2. Diagnosis and treatment of smallpox. R. W. Burlingame.
3. Diphtheria. E. C. Fleischner.

Tuesday, March 15, 1921—Section on Surgery.

1. The question of immediate trachelorrhaphy. L. A. Emge.
2. Skin grafting by some of the new methods. G. W. Pierce.

Tuesday, March 22, 1921—Section on Eye, Ear, Nose and Throat.

1. Cosmetic surgery of the nose and ears. Grant Selfridge.
2. Plastic operations on the eyelids and mouth cavity, G. W. Pierce.

With the aid of a gift from Dr. Adolph Barkan, emeritus professor of the Stanford Medical School, Stanford University is gathering in the Lane Library of the Medical School in San Francisco, a collection on the history of medicine that will be equaled by no other western institution.

Dr. Barkan will give $1000 a year for the next three years, to which the university will be able to add from the income from certain Lane Library Foundations $1500 a year, making a total fund of

$7500, all of which will be expended on books concerning the history of medicine.

Dr. Barkan, himself, is now in Europe, and he has employed an expert and has also gained the assistance of one of the most celebrated professors in Europe to aid him in getting together this collection.

Dr. Barkan was professor of structure and diseases of the eye, ear, and larynx, in the Medical School, and retired from active teaching in 1911. He has before this been a liberal benefactor of the Medical School Library, having given his own library dealing with the subjects in his own special field, together with $10,000 as a fund for the purchase of other books on these subjects.

PLACER COUNTY

The Placer County Medical Society held its regular meeting at the Colfax Hospital, Saturday evening, April 2, 1921. The program consisted of a pneumothorax clinic. The operation of pneumothorax was performed on two patients, and several cases illustrating partial and complete pneumothorax, hydrothorax and hydropneumothorax were exhibited on the fluoroscopic screen for the benefit of the visiting physicians.

Following the clinic, the regular business of the society was transacted and the meeting was adjourned.

SONOMA COUNTY

At the March meeting, a new constitution and by-laws for the society were adopted; the principle change being the establishment of an executive committee consisting of the president, secretary, and three members appointed by the president so as to represent the different sections of the county, and having the power to act for the society when expediency requires.

The society was invited to the home of Dr. J. W. Cline to celebrate his fortieth anniversary as a doctor. As a token of esteem the doctor was presented with a silver cup.

Immunity

The Journal will express no opinion of and assume no responsibility for the views of "Immunity" correspondents. They must win or lose on their own merits by abounding in their own wisdom, and each reader must appraise each communication for what it is worth and take it for better or worse.

Communications will not be signed when published, but the author must be known to the editor. Send on your complaints, your kicks, your knocks, your boosts. We want constructive and destructive criticism. Air your pet hobbies. You are not limited to your own town or the medical profession.

WHY! OH! WHY!

To the Editor: Two queries have been propounded in the surgeons' dressing rooms of the ——— Hospital of late.

(1) Why, or what has discouraged the appearance of the free lunch-stand at the County Medical meetings? With the lunch we were always sure of having an evening not entirely wasted.

(2) Does the hospital pay rent for the lounging-room of the County Medical Society, to be employed by its lethargic nurses?

I, with others, would be pleased to hear the answers.

Sincerely,

San Francisco, April 9, 1921. X. Y. Z.

St. Joseph's Hospital, San Diego

By C. E. REES, M. D.

St. Joseph's Sanitarium has been operated as a general hospital by the Sisters of Mercy since 1890, and has gradually been enlarged from an institution accommodating thirty-five patients to one accommodating one hundred and fifty.

The present hospital consists of three buildings. The main hospital building, comprising four stories, is the one in which all patients are cared for. The annex is a two-story building, the lower portion of which contains nurses' lecture hall and X-ray department; the upper floor contains the operating rooms. This annex is connected with the main building by a corridor. The third building, a modern home for nurses, is situated about one-half block from the hospital.

The nurses' training school has at present about forty pupil nurses, under the direction of one of the sisters, who is hospital superintendent. The regulation three-year course is given and all sisters doing nursing duties are either pupils or graduate nurses. At the present time there are eighteen sisters who are registered graduate nurses of this hospital.

The main part of the hospital is segregated into three departments—the surgical, occupying two floors; medical, one floor, and obstetrical, one floor, Each floor is in charge of a graduate sister, and the general nursing is done by pupils.

The obstetrical department is very complete. The delivery room and nursery are each in charge of a sister and are well separated from the rest of the hospital. The delivery rooms will accommodate three labor patients at one time, and contain quarters for physicians.

The nursery maintains very complete records of infants; the foot-print identification method is used; one print being taken at delivery, and the second when the infant leaves the hospital.

The surgery unit is separated from the main building and is very completely equipped, having two large major operating rooms; two minor operating rooms; one dark specialty room, in addition to sterilizing room, nurses' room, doctors' room and quarters. The operating department is in charge of a specially trained surgical nurse, who has two graduate sisters as assistants. The last three months of the pupil nurse's course are spent in this department.

The laboratory is in charge of two pathologists who alternate services and who are employed by the hospital. The pathologist has two assistants—one a trained full-time technician, and the other a sister who is a graduate nurse—so that a laboratory assistant is always available for emergency work.

A two-dollar laboratory fee is charged each patient on admission; this fee covers charges on following laboratory work:

1st—Complete blood count and urinalysis, which is done on every patient as soon as admitted;

2nd—Any smears and culture which may be necessary;

3rd—Gross and microscopic examination on all tissues removed.

This is a routine procedure, and all tissue removed in surgery is sectioned. All other laboratory work is done at moderate fees, which are waived when necessary.

The X-ray department is operated by a Roentgenologist who has as his assistant a sister nurse who is available at all times. Fees for this work are at a moderate schedule, but are reduced or waived as the case demands.

All necessary work in this hospital is so arranged that the patient after admission may receive all of the benefits of the institution, regardless of his financial condition.

The record department is in charge of a specially trained sister, and all records are completed, filed and indexed according to name and disease.

The hospital requires of the attending physician a complete history and physical examination record of each patient within twenty-four hours after admission, and all surgical patients must have a written pre-operative diagnosis on their charts before they are anaesthetized.

The hospital has a regularly appointed staff, and any member of the medical profession who is in good standing is eligible to apply for appointment.

Staff appointment requires a pledge of members to observe rules and regulations of the hospital, which rules are essentially those established in the minimum standard of the American College of Surgeons.

BLOOD

Date	Hb. % Dare	Red Cells	White Cells	Neutrophiles	Basophiles	Small lymphocytes	Large Monos and Transit. forms	Myelocytes
Mar. 29	70	3,456,000	74,000	3	0	96	1	0
Mar. 31	..	.....	69,000	2	1	65	30	1
Apr. 2	..	.....	2,400	5	0	84	10	1
Apr. 3	..	3,600,000	2,000	Only lymphocytes seen				
Apr. 4	45	2,810,000	600	"	"	"		

CASE HISTORIES FROM THE CHILDREN'S DEPARTMENT, UNIVERSITY OF CALIFORNIA MEDICAL SCHOOL AND HOSPITALS

1921 Series, Case No. 5, March 29, 1917. Male, American; age, nine years. No. 13,597. L. J.

Family History: Negative. Father and mother living and well. There are five other children living and well. One brother died; cause unknown.

Past History: He had most of the diseases of childhood. Since having measles, six months previous to entry he had been weak, and four months before entering hospital he had enlargement of the glands of the neck, which was accompanied by increased malaise. Blood examination at this time, done in the city in which he lived, showed increase in the total white count with a high percentage of lymphocytes. He was given X-ray treatments at this time with apparent improvement. However, six weeks after these treatments a swelling appeared on the left side of his neck accompanied by considerable temperature. This swelling became semi-fluctuant, and was opened and discharged a sero-sanguinous material. Following this he was slightly improved, but two weeks before entrance to hospital he began to lose strength rapidly. When he entered the hospital he was running a temperature of 38.8°C.

Physical Examination: Showed a poorly nourished, very pale, waxy colored boy. His head was held forward in a peculiar manner as if he were having difficulty in breathing. His voice was nasal and slurred; breath was foul, and breathing was entirely through his mouth. His mouth could not be opened very well because of marked enlargement of the cervical glands. His tongue was markedly coated. His whole posterior nasal pharynx was filled with putrefying material. Tonsils and pharynx showed ulcerated areas and the glands of all the superficial groups were enlarged, cervical, inguinal and axillary, discrete, firm and tender. His lungs showed slight apical dullness, with signs of enlargement of the bronchial glands. Breath sounds were harsh and there were many coarse, bubbling rales. The heart area was normal; the sounds were of very poor quality; there was definite hemic murmur. The abdomen was full, the liver outline was 10 cm. below the costal margin and extended across the epigastrium, and the edge was firm and slightly tender. The spleen extended in the line of the ninth and tenth rib, 9 cm. below the costal margin. The outline of the spleen could easily be made out; notch was distinct, spleen was firm but slightly tender. No other masses were felt in the abdomen. There was no free fluid in the abdomen. His skin was rather dry. Tissue turgor was poor, and there were numerous small petechiae over the lower extremities and back. Von Pirquet and Wassermann reactions were negative. Blood culture was sterile. The blood picture is the typical one of lymphatic leukemia, as follows:

Temperature during the week he was in the hospital, ranged between 39° and 41° C. He became gradually more toxic, and died a week after entrance.

Autopsy: Showed the usual findings of lymphatic leukemia, with lymphocytic hyperplasia of the spleen and fatty degeneration of the kidneys, petechial hemorrhages beneath the pericardium and in the endocardium and ulcerative pharyngitis.

Discussion: This case illustrates three very important phases of lymphatic leukemia. First, the value of X-ray treatment: During the past few years X-ray treatment for lymphatic leukemia has developed to the point where it has become one of the most recognized forms of treatment. Either X-ray treatment, or better, radium treatment, where that is available, has a definite effect on the lymphoid tissue, and if applied early in lymphatic leukemia, will very often produce successful remission. In children the remissions are usually not very long, though in adults this form of treatment may be able to hold the condition in abeyance for months or even years if properly used. The X-ray treatment and blood picture should be parelleled, and undoubtedly, during the early stages of the disease such treatment will show a definite effect. In the later stages it has no effect and may, in fact, hasten the process.

Second, this case illustrates the final leucopenia, which at times develops in the course of the acute leukemia. This is to be interpreted as a failure of the blood-forming organs, a terminal aplasia developing.

Third, the septic appearance of lymphatic leukemia in its terminal stages: In the late stage there is no definite treatment. In this case indirect transfusions were given without any benefit either on the course of the disease or the blood picture. In the septic stage, X-ray or radium treatment are not indicated.

Prognosis: The prognosis in lymphatic leukemia in childhood is practically always fatal. The only hope in these cases is early recognition of the disease, and proper application of X-ray or radium treatment.

Proctologic Society

The American Proctologic Society announces the Twenty-second Annual Meeting, to be held in Boston, Mass., on June 3, 4 and 6, 1921. The profession is cordially invited to attend the public sessions. The meeting place will be the Boston Medical Library.

WISCONSIN HOME-COMING

The State Medical Society of Wisconsin will celebrate its seventy-fifth birthday by holding a "Home-Coming" meeting in Milwaukee, September 7, 8, and 9, 1921. All former Wisconsin men, whether they have practiced there or left Wisconsin to study medicine, practicing elsewhere after graduating, are invited to this home-coming.

The officers of the society are anxious to secure at this time for mailing purposes the names of all former Wisconsin men. They will confer a favor by sending their names and addresses to Dr. Rock Sleyster, Secretary, Wauwatosa, Wis.

Obituary

DR. STANLEY P. BLACK,
Los Angeles

Stanley P. Black, A. B., M. D., patriot, physician, pathologist, humanitarian, is dead. Perhaps no member of the profession in the last decade has left so indelible an imprint on the lives of the community in which he lived and worked as this earnest, hard-working physician.

Born in Omaha, Nebraska, August 21, 1859, he graduated from the Northwestern University in 1885, and after spending three years in Europe, he returned to take his degree in Medicine from the same institution. As an interne in Cook County Hospital, he came under the influence of Dr. Fenger, an association which was probably the determining factor in his life work.

He taught pathology, bacteriology in the medical school of Northwestern and in Mercy Hospital in Chicago. Coming to California in 1897, he immediately became a leader in the medical life of southern California. He served as health officer of Pasadena, California, for many years. Was professor of pathology of the University of Southern California Medical College during the entire period of his residence here.

Active always in professional and community service, he was one of the founders of the Clinical and Pathological Society, and was instrumental in the advancement of the Barlow Medical Library.

As teacher, consultant, adviser and friend, he lived up to the standard he set for himself. He will live long in the memories of his students, his associates, and his confreres in the profession.

Notices

IN HONOR OF MME. CURIE

The June issue of the Medical Review of Reviews will be a special radium number, dedicated to Mme. Curie. The issue will consist exclusively of articles on radium and its uses, written by the most prominent radiologists in the United States and Canada.

Copies will be sent complimentary to every physician interested in the uses of radium, and any readers of this item who desire that issue may have it by asking for it from the Medical Review of Reviews, 51 East Fifty-ninth street, New York.

International Union Against Tuberculosis Conference in London, July, 1921, Under the Auspices of the National Association for the Prevention of Tuberculosis.

The next International Conference will be held in London from July 26, to July 28, inclusive.

The conference will be open to members of the International Union against tuberculosis, and to delegates from countries within the League of Nations, and by the United States of America.

SPECIAL ATTENTION

The following communication has been received from John L. Flynn, Acting Collector of Internal Revenue:

Doctors, hospitals, and others required to register under the Harrison Narcotic Law have been under the impression that they have the months of June and July to register and pay narcotic tax. Such is not the fact. You must register in the month of June, or as the law states, on or before July 1, 1921, to avoid penalty. Doctors contemplating being out of the State during the month of June, communicate with the Narcotic Division of the Internal Revenue. Full information in reference to registration will appear in the June Journal.

JOHN L. FLYNN,
Acting Collector Internal Revenue, Custom House, San Francisco.

Beechler, James. Died in San Francisco March 22, 1921. Age 80 years. Was a graduate of the Eclectic Medical College, Pa., 1879. Licensed in California, 1895.

Case, Chas. Elijah. Died in Tacoma, Washington. Was a graduate of the California Medical College 1880, also College of Physicians and Surgeons, Chicago, 1886. Licensed in California, 1880.

Ferguson, Walter Perry. Died in Santa Ana, California. Age 79. Was a graduate of the Eclectic Medical Institute, Ohio, 1883. Licensed in California 1892.

Hensel, Eugene A. Died in San Diego March 17, 1921. Was a graduate of Rush Medical College, 1895; licensed in 1901.

Hughes, John Harrison. Died March 15, 1921. Was a graduate of the California Medical College, 1887. Licensed in California, 1887.

Kelsey, John Edson. Died in Berkeley, California, March 24, 1921. Was a graduate of Cooper Medical College, 1894. Licensed in California, 1894.

Wilson, Henry Beniamin. Died in San Diego February 27, 1921. Was a graduate of Bellevue Hospital Medical College, 1887. Licensed in California, 1914.

Woodworth, John Bennett. Died March 16, 1921, in Redlands, California. Was a graduate of the Starling Medical College, Columbus, Ohio, 1896. Licensed in California, 1915.

CORRECTION

The announcement of the death of Dr. H. P. Wilson in the California State Journal of Medicine of April, 1921, was an error. Dr. Wilson is in San Diego, California.